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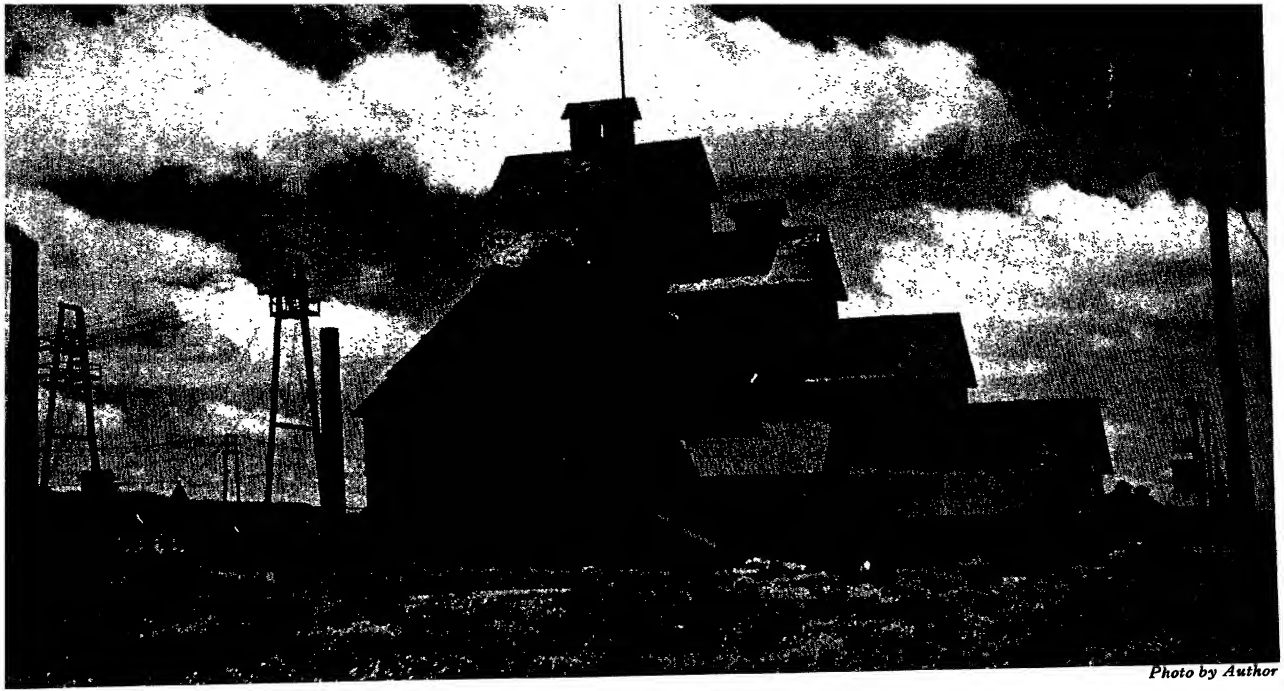

Photo by Author

"OLD RELIABLE"

Great grandsons of the Potato Famine Irish, who put down its first shaft in the fifties, still work the mile-deep stopes of the Quincy Mine. One of the oldest mines on the North American continent, the Quincy has operated almost continuously for the better part of a century. Few mines, no matter what their product, have provided livelihood for so many generations.

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The Story of the
First U.S. Mining Boom

BY ANGUS MURDOCH

THE MACMILLAN COMPANY
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FOR MY WIFE, FLORENCE

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CHAPTER I

TOP OF FORTY-ONE

U.S. Highway Forty-one ends in Miami, Florida, after crossing the lower half of the nation like the sidewalk strutting up to a multimillionaire's show place. The highway's southern extremity is the darling of Sunday rotogravure sections, and tons of printer's ink have been used to paint the charms of its bathing beauties, palm trees, and gilded oddments. Constant readers might well conclude that Forty-one runs only southward, and that all its miles travel steeply downhill.

But, picture editors to the contrary, U.S. 41 has a northern terminus which is, in its own rugged way, highly photogenic. Certainly, its romantic and improbable history more than makes up for any shortage of glamour-girls.

Northbound, Forty-one unfolds an uneventful, white concrete path through Indiana, Illinois, and Wisconsin. Soon after entering the Upper Peninsula of Michigan the highway properly changes in character to less citified, macadam black-top. Now pine guards the highway and, as the miles roll onward, scattered clumps merge into an endless forest of Christmas-tree green. The black-top passes through smaller and smaller towns, and for long stretches sees no one. Fewer automobiles travel along its surface, and their drivers wave to one another with the eager friendliness of strangers meeting in lonely country. The black-top continues northward—one hundred, two hundred miles—finally winding its way through the twin towns of Houghton and Hancock spread out on opposite shores of Portage Lake.

You might expect Forty-one to pull up here on the brink of Lake Superior; but it still has fifty-six miles of wilderness to go—swooping around the roller-coaster curves of Brockway Mountain to dissolve in sand on the very brim of the greatest body of fresh water in the world.

These last fifty-six miles transect a mere thumb of land poked like a testing finger into the cold, blue waters of Lake Superior. This is the Keweenaw Peninsula: a slightly crooked finger, and a narrow one. It is something like thirty miles wide where it joins the figurative hand of the mainland and tapers almost to a pointed fingernail. Compared with other water-gloved projections of the world, the Keweenaw is an insignificant bit of land. None the less, it is as scenically—and historically—exciting as any spot in the United States travelogue. It seems like a section of the Maine coast, transported intact to the Midwest; like a piece of Colorado, misplaced to the East. Certainly, it doesn't belong in the flat-chested Middle West. But here it is—a spectacular remnant of Nature at her rawest.

In the preglacial ages, when the Superior region was formed, white-hot, molten lava, spewed up into great heaps of greenish gray basalt, formed the stony pile that became the Keweenaw Peninsula. Ice packs gouged and scoured away at the rocky heaps, leaving behind a wild abandon of cliffs and crags looking down on boulder-strewn valleys. Later, eroding seas covered the Peninsula; and when they retreated they left water-soaked swamps to be treacherously camouflaged with tamarack and white cedar. Then wherever a nook or cranny held a bit of soil, pine took root, so that now the Keweenaw is bald only on its peak tops. Evidently it was a sudden whim which inspired Nature to create this isolated chaos. The miles of surrounding land show her in far gentler moods.

However, more than explosive scenery sets the Keweenaw apart from the conventional midwestern pattern of cornfields, bungalows, and smokestacks. As a casual tourist traveling along the Peninsula, you are tantalized by a succession of roadside markers bearing such legends as "Pittsburgh & Boston Mining Company, Established 1843," "Empire Mining Company, Established 1845," "Phoenix Mining Company, Established 1849." Near the waterfront village of Eagle River you probably stop to read the plaque beneath a small monument: "In Memoriam, Douglass Houghton, The Father of U.S. Copper Mining." Ghost towns sagging at the foot of greenstone bluffs offer still more evidence that you have stumbled on what was once a sizable mining district. And in the

unlikely mineral state of Michigan! Voluble gasoline station attendants explain with a prideful sweep of the hands that this is not merely the Keweenaw Peninsula but the *Copper Country.*

Half curious, half polite questions will quickly disclose the region's recent past. During World War I, the Keweenaw produced millions of pounds of copper to help beat the Kaiser. In those days 66,000 people lived on the pay checks of one mining corporation—the Calumet & Hecla Consolidated Copper Company. Further queries uncover assorted miscellany: During the early 1900's, the Keweenaw led the entire world in copper production. Michigan for years vied with Arizona and Montana as the leading American copper camp. And once a Copper Country mine paid more in dividends than any metal mine on earth.

But the first hint of the really incredible stories buried in the abandoned shafts and ghost towns is likely to drop unconcernedly from the lips of some doddering old-timer: "This here Keweenaw has sure seen some sights. Why, say—the first mining boom in the U.S.A. took place right here on Lake Superior!"

The hardened tourist may put the old gaffer down as a born exaggerator. Everyone knows that hell-roaring mining-boom camps belong far west of the Mississippi; certainly they have no place in a prosaic midwestern state known for automobiles and god-awful furniture. But if such offhand remarks arouse your curiosity sufficiently, you can track the story of Michigan copper through dusty books, old letters, and yellowed newspapers; you will see, unfolding before you, the eventful and colorful history of a century-old American mining district. Moreover, research proves that the tale *does* open with the events leading up to the first mining rush in the U.S.A.

From its very beginnings, there has been something preposterous about Michigan copper.

Its early history is wrapped in legends every bit as fantastic as the tales that led Coronado on his fruitless search for the Seven Cities of Cibola. These legends in turn inspired an absurd paradox: a mad scramble of prospectors who rushed off to an unknown wilderness in search of a base metal.

Unlikely as it may seem, six years before the Forty-niners set

off for Sutter's Mill and gold, three decades before men braved the Forty Mile Desert to reach Comstock's Lode and silver, an earlier horde of fortune seekers tumbled over one another to get to the rocky shore of Lake Superior.

Why would men travel to the end of nowhere to seek an ordinary metal like copper—to say nothing of rushing after it as though it were gold?

The answer is in those ancient legends which positively guaranteed the South Shore of Lake Superior to be solid copper and not rock at all. The sun, it was said, set on copper mountains and rose to gleam on huge copper boulders tumbled about the valleys. These legends were partly disproved by the French and the English in the course of their early explorations; but they persisted in the form of rumors and half-truths. The latter, with some plausibility, had to do with fabulously rich lost mines and veins of virgin copper which were said to poke right out of the ground. Hearsay added that pure silver was mixed in with the copper-bearing rock. This blend of myth and near-fact hung over the Copper Country like a Lake Superior fog, and was just the sort of misty stuff wishful thinkers feed upon.

Circumstances combined to bring this hazy picture into national focus during the 1840's. This was an era of naïveté when men were willing to believe anything possible in the fabled wilderness west of the Appalachians. It was just at this time that a thoughtful naturalist with an explorer's turn of mind rediscovered the Keweenaw and, so to speak, brought the rumors and legends up to date. These half-forgotten tales lost none of their original splendor in the reviving, and quickly traveled to the eastern seaboard. An easterner, with a minimum of imagination, could picture lumps of copper bigger than cannon balls lying around on the ground along the Lake Superior shore. He could see himself gathering a fortune in a few weeks—just for the stooping. If slothful, he could just as easily imagine hiring an Indian or two to do the stooping for him.

Actually, it was "tall stories" accumulated in two hundred years of tale-spinning which brought a freshet of copper-greedy men west in 1843. In their eyes, the rush to the Keweenaw was more than justified. They expected to find the red metal so

plentiful that it would more than make up in quantity for its base character. They dreamed of riches in terms of pounds and tons instead of troy ounces. Aside from this, the men who rushed to Lake Superior differed not a bit from all the greedy ones who later hurried to California, Colorado, or Alaska. Certainly, the copper prospectors of the 1840's had as much difficulty in reaching their goal as those who afterwards fought their dangerous way over the high Sierra or others who plodded a frigid trail across the Chilkoot Pass.

The Copper Country of that day was, as Patrick Henry told Congress, "beyond the most distant wilderness and remote as the moon." An earlier commentator, Baron L'Hontan, put the matter still more strongly when he wrote to the King of France. "The Keweenaw," the Baron said, "is at the fag end of creation."

Prospectors had first to make their way to Sault Ste. Marie at the top of Lake Huron. The Sault lay one hundred fifty water miles from the Keweenaw, with as stormy a stretch of water as there is in the world intervening. Then they had to await their turn for a few precious inches of deck space on one of the tiny schooners which braved Superior's sudden squalls so that eastern women might wrap themselves in beaver. The copper fever burned so intensely in some men they wouldn't wait for schooner passage. These impatient souls hired French-Canadian "voyageurs" to paddle them in fragile canoes along the dangerously jagged shore line. Sometimes they completed the journey, often enough they did not. However they traveled, they matched their luck against unpredictable Superior.

The Big Cold Lake must have laughed to herself as she tossed the copper hunters on her bosom. She was carrying them to the Copper Country at least three decades too soon. Not until Tom Edison and his electric light needed copper wire would the Nation be greatly concerned with the red metal. In the 1840's, copper enjoyed a sub-luxury status; it was used as evidence of prosperity by wealthy burghers who filled their kitchens with copper pots and pans. Only the Navy and the merchant marine were seriously interested in the metal. Wooden vessels of the day had their bottoms sheathed with copper to discourage marine growth. And there was plenty of copper in the world to sup-

ply these needs. While all agreed that a domestic supply would be a fine thing, the first mining boom in the United States could just as well have waited a generation or so.

Premature, absurd and paradoxical as it may have been, the rush of 1843 gave the young United States one of its first glimpses of the mineral riches which lay beneath its wildernesses. And oddly enough, Michigan copper occurred in the only type of deposit which could have been of much value in a day of primitive metallurgy. The red metal found on Lake Superior came out of the ground so free of adulterants that it could be formed into pots and pans without refining or processing. From 1843 to the 1920's, Michigan was the only place on earth where pure, native copper was found in commercial quantities. The virgin metal, however, proved a deceitful wench, and it was some time before mere males could comprehend her vagaries.

In the course of a century, all the world came to know Michigan copper—that is, the mining and engineering world. Progressive citizens of the elegant eighties snapped on their newfangled electric lights with no idea that the electricity traveled on wire drawn from Lake copper. Passengers on trolley cars paid their nickels without a thought of the Keweenaw Peninsula. But the engineers who built the early electric systems had paid a premium for the purity of Michigan copper and so knew the source of the metal very well indeed. Mining experts the world over came to see the monstrous machinery which hoisted Michigan's copper-bearing rock from more than a mile underground. Technical publications and professional papers never ceased to wonder at the genius which designed the huge pumps and stamp mills. However, these huge contraptions failed to catch the imagination of the American public. If it heard of the Copper Country at all, it was merely in terms of dollars, cents, and annual dividends. Otherwise, Michigan's copper range has lived a hundred years of popular anonymity.

Even in the days of its greatest triumphs, the Copper Country managed to remain isolated on the brim of nowhere. Many of its customs and most of its capital came from Boston. Its workers were born and bred in the swarming cities of Europe. Its mining methods were imported from the entire world—from the diamond

mines of Kimberley to the copper and tin "bals" of Cornwall. The people of the range evolved from these component parts, and the district grew up with its own Columbus, its own Comstocks, and its own special assortment of Paul Bunyans.

These people and the copper they made add up to quite a story.

CHAPTER II

RIDDLE OF THE NORTH

As AN INTERESTED PARTY to North Americana, Lake Superior copper seems as ubiquitous as Wrigley's Doublemint or Mr. Singer's sewing device. It is simply amazing how the Michigan metal pops up in the historical lore of this continent. It was unmistakably on hand in Yucatan and Mexico to interest Columbus and Cortez; it was at least a factor in the French exploration of the Superior region and, long before this managed to entangle itself in a major mystery of the entire North American continent. The Copper Country was discovered and rediscovered more times than both the North and South poles together; its metal both assisted and opposed Jehovah himself and in a lesser sacrilege depleted the pocketbooks of the English House of Lords. A few years later Michigan copper dictated the fixing of an American international boundary line and was then mixed up in low skulduggery in the cloakrooms of Congress.

All this intricate interweaving with North Americana took place years before the 1840 boom days. Not that this lessens the drama of that occasion; it's just that, as a mining melodrama, the rush of the 1840's was not a première at all—merely a revival.

The white man's first determinable interest in Superior Copper was awakened prosaically enough. Samuel Champlain probably was the first to own a specimen and to be reasonably aware of its approximate origin. Champlain had no sooner founded the city of Quebec in 1608 than he set about making friends with his neighbors—the Algonquins. The Indians were agreeable to overtures and showed it by presenting the explorer with a chunk of solid copper which he said was "a foot long, very handsome and quite pure." The grateful Champlain sent it home to King Henry IV just to show how well things were going in the New World.

Champlain wasn't overly intrigued by the Indians' gift, for the

metal was not, even then, exactly precious; but doubtless he felt nice etiquette required some comment, and so he asked where the friendly red men had found the handsome souvenir. With sweeping gestures the Algonquin chief explained that the specimen had come from the "Bank of a great river flowing into a great Lake." Champlain noted this reply in a letter to the King.

The tribal leader, beyond doubt, was speaking of the Ontonagon River and Lake Superior—certainly of the Copper Country. Had Champlain pressed him with more questions, the French might then and there have fixed the approximate location of the copper region. The information could have been filed away under "Useful Knowledge About the New World," until France felt an urgent need for red metal. When, as, and if this time came, a special expedition could have been dispatched to seek it. But Champlain's fellow Quebecians and the French explorers who followed were cursed with the imaginative Gallic mind, which still likes to call a spade a steam shovel or, at the very least, a scoop. The result was that no Frenchman who visited North America during the next century ever referred to Lake copper as unconcernedly as Champlain.

The post-Champlain French immediately elevated the Copper Country to the status of a small-scale City of Cibola or minor Golconda—although in a definitely left-handed manner. They were seldom, if ever, content to report the south shore of Lake Superior as 32-carat, solid copper.

Possibly they felt that the idea of mountains of pots and pans was uninspiring. At any rate, their letters inferred that the lake shores were studded with precious gems, and veined with gold and silver. If copper was mentioned at all it was in the light of an added attraction.

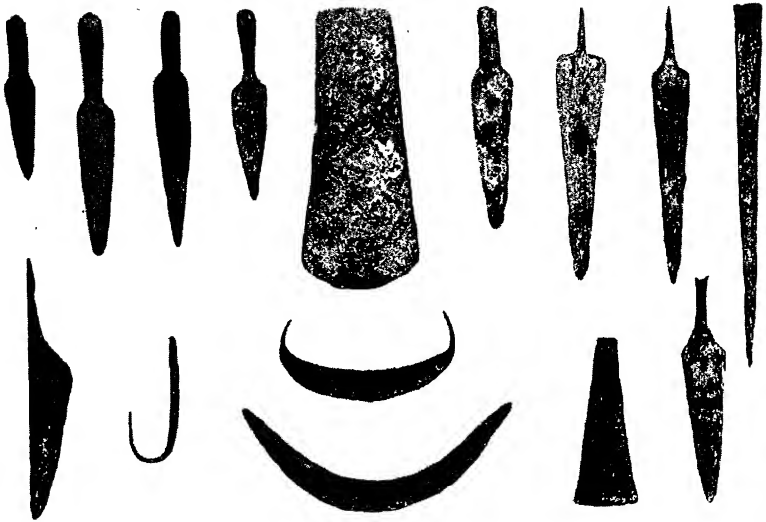
Fact was, the French were hard put to glamorize the new continent. The kings of France were frankly bored by tediously similar reports dealing with fevers and tribulations, relieved only by light references to Indian mistresses. They wanted results of the sort the Spanish were getting to the south. The French in the New World realized this and leaned heavily for inspiration upon the legends which the Indians so obligingly furnished. The Algonquins and especially the Chippewa could

tell an endless succession of myths and legends. Unfortunately, copper was the only metal involved in the plots; the French thereupon supplied the more precious materials.

There was, for example, the story of the extravagant doings of the Chippewa god, Missibizzi—a lieutenant to the boss spirit, Manitou. Missibizzi was famed for innumerable fabulous exploits here and there about the Big Cold Lake. He lived on the genuine but reputedly portable island of Michicopoten, and though it was positively guaranteed to be solid copper he paddled it about Superior as his personal canoe. Missibizzi, they said, had under his special charge many spirit-haunted copper mines. When the Indians referred to these mines they vaguely hinted at a powerful, lost race of miners who at some ancient time had worked them. The Chippewa were positive of Missibizzi's existence, for the god berated them in a voice of thunder if they dared approach either sacred boulders or haunted mines. There were other Indian legends: tales of magical copper pebbles and mysterious copper rocks.

The French listened avidly, and the Gallic imagination worked overtime. During the seventeenth century few Frenchmen left for the Superior region without announcing they intended to seek precious gems, gold, silver, furs, and possibly copper—in the order named. A large percentage of the explorers were Jesuit missionaries whose principal purpose was to save savage souls. The good pères, in fact, seem to have been the most adept at touching up the Indian legends. They were nearly as superstitious as the Indians, they too had easily bored employers back in France—and quite naturally couldn't forget that other missionaries had put good works on a handsomely paying basis with the aid of the metal mines of Peru and Mexico. Understandably, they embroidered the Indian legends in writing home and then hoped they'd come true.

The Jesuits found copper was also a distinct stumbling block to conversion. The Indians, for undivulged reasons, regarded copper pebbles, knives, spearheads, or fishhooks made of the metal as family icons, to be revered as sacred objects. Moreover, in times of stress the aboriginals, no matter how soundly Christianized, were apt to call upon Missibizzi for help in prefer-

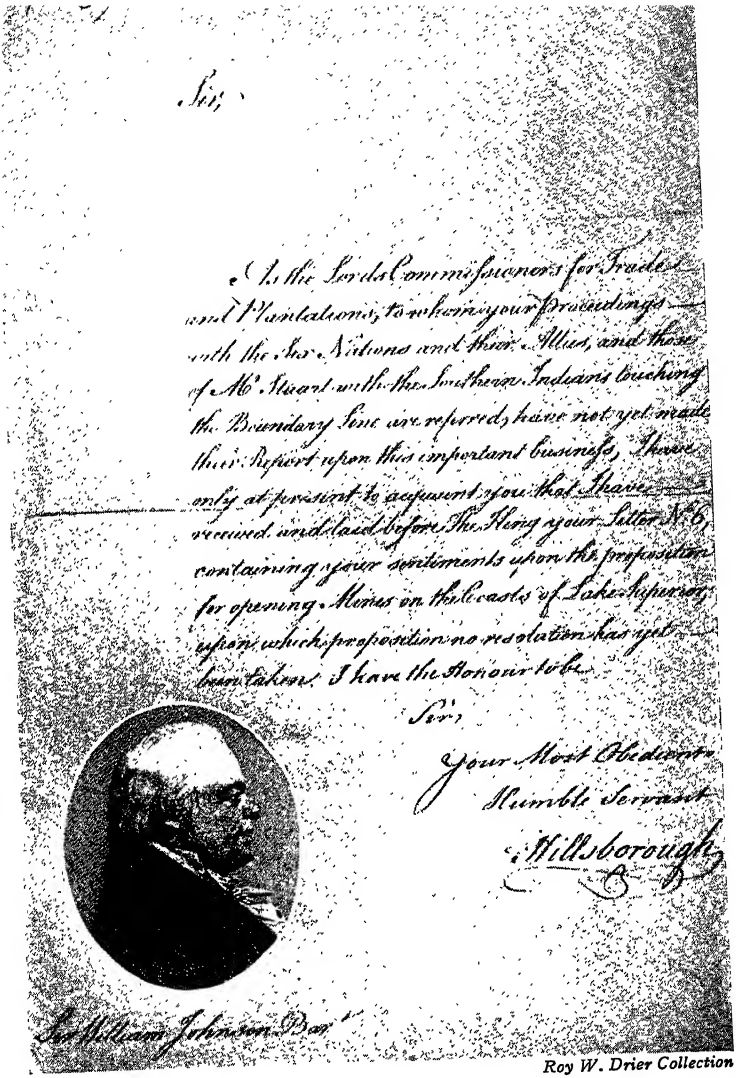


Milwaukee Public Museum

Courtesy Bernie Babcock

PRE-COLUMBIAN COPPER

Copper tools and weapons (*left*) fabricated from Lake copper. Oddest relics of the ancients is the stone bust (*right*) found near Crowley's Ridge, Arkansas. Known to museum visitors as "King Crowley," the bust has a solid copper heart and copper eyeballs with silver pupils. They are said to have been made from "half-breeds," or specimens of native copper mixed with pure silver peculiar to Michigan. The Kings's age is a reputed 25,000 years, yet his heart is shaped in the relatively modern, St. Valentine design.


Sir,

I, the Lords Commissioners for Trade and Plantations, to whom your Proceedings with the Six Nations and their Allies, and those of Mr. Stuart with the Southern Indians touching the Boundary Line are referred, have not yet made their Report upon this important business, I have only at present to acquaint you that I have received and laid before The King your Letter No. 6 containing your sentiments upon the proposition for opening Mines on the Coasts of Lake Superiour, upon which proposition no resolution has yet been taken. I have the Honour to be

Sir,

Your Most Obedient

Humble Servant

Hillsborough

Sir William Johnson Bart

Roy W. Drier Collection

"MINES ON THE COAST OF LAKE SUPERIOR"

Facsimile of Letter Number 9 in correspondence between the King's Equerry, Lord Hillsborough, and Sir William Johnson, Superintendent of Indian Affairs for the Crown, which resulted in the Carver-Henry Expedition (1771–72), the first organized copper mining venture in the Michigan Copper Country. Johnson not only was an important stockholder in the enterprise but must have been influential in securing titled, financial backing. Such impressive men as Sir Somvel Tutchet, Sir John Baxter, Counsel to the Empress of Russia, and His Royal Highness, Duke of Gloucester, were among the shareholders. Johnson's influence at court and high favor with George III came after he had defeated the French at Lake Sacrement and had christened it Lake George. The King thereupon made Johnson a baronet and gave

ence to the imported French God. Thus the good Jesuits, in effect, accepted the legends for letter-writing purposes, but disparaged them in the presence of their flocks.

Apparently neither the lay nor the ecclesiastic French were curious about the source of the Indians' copper artifacts or about the identity of the ancient miners. All the Indians seemed to know was that copper and articles made of copper were extremely hallowed. It was obvious that they themselves did no mining and knew nothing of metalworking.

It was not until practical-minded fur traders traveled out to Isle Royale in the Big Lake that any attempt was made to investigate the Indian tales of spirit-haunted mines. On the Isle were found a great number of abandoned pits that someone had worked at some undeterminable time. Undoubtedly, this was the source of the metal used for the needles, fishhooks, knives, and other copper objects of the Indians of the Superior region; but it was obvious that the Indians knew nothing of the race which had mined on Isle Royale. Insistent questioning established only the fact that the miners must have been very ancient indeed.

As the Superior region came to be explored and traveled more thoroughly, references to gem-crusted mountains disappeared from French reports although copper was mentioned frequently. Apparently France's dream of finding precious minerals in her section of the New World faded after 1665 when an unidentified explorer journeyed up the Ontonagon River to investigate Indian legends and found only a huge, solid copper rock lying upon the river bank. History says little about this expedition except to recall that a specimen was hacked off the rock and shipped to King Louis XIV. Surely it was no oversight that nothing was said about gems, gold, or silver.

The final French interest in Lake Superior minerals is important only because of its famous but irrelevant outcome. Father Marquette and his lay partner, Louis Joliet, set out from the Sault in 1672, with the intention of making a thorough exploration of the Lake Superior copper deposits. As it happened, they changed their plans, set off in another direction and made their names as discoverers of the Mississippi River.

The French era in North America was, of course, too early

for a serious interest in so bourgeois a metal as copper. Even had the Keweenaw Peninsula been a thumb of solid copper, as was reported, it is doubtful if the French would have attempted to exploit it. The copper region was hundreds of dangerous canoe-miles west of Quebec; literally at the "fag end of creation." The French contribution to the lore of Michigan copper was principally the extravagant embroidering of Indian legends. These persisted to the time of the 1843 rush, and the French dream of gold and silver was shared by those who came at this later time.

When the British took over the New World, the home folks were eager for any news about its wonderful natural resources. One of Baron Munchausen's contemporaries, Jonathan Carver, set out to gratify this interest. In his book, "Travels Through the Interior Parts of North America" published in 1770, he added some wonderful twists to the old Indian legends. His descriptions of the Lake Superior mineral deposits so amazed Londoners that a mining corporation was formed immediately. The stockholders were largely titled Britons, and the charter was issued at the behest of the King himself. The corporation employed another spinner of superlatives, Alexander Henry, who collected a party of Birmingham coal miners and, after journeying for some months, arrived in the Copper Country. They drove a tunnel into the bank of the Ontonagon River intending to develop a combined silver and copper mine. The former metal was to pay for the cost of transporting the latter to England. They found neither metal, but since copper was at least half of what they were after, perhaps the Carver-Henry expedition can be awarded the distinction of being the first organized copper mining venture on Lake Superior.

The British fiasco, like the French extravagancies, simply added momentum to the gradually rising interest in the Superior region. The Carver-Henry expedition, however, reverberated some years later at a famed treaty-making convention in Paris, France.

As you will recall, all the details of establishing the United States of America weren't concluded simply by announcing the Declaration of Independence and ringing the Liberty Bell. There were one or two other items to attend to. Among them was the matter of the international boundary line between the new Republic and Canada. A convention was held in Paris to discuss

this matter, amongst others, and Ben Franklin was our principal representative. The wrangling over territorial division was bitter, and Franklin, in particular, was so grudging with acreage that it appeared for a time the entire conference would fall through. Eventually, as a modern map will show, the international boundary line was drawn from New England, up the St. Lawrence River and through the middle of Lakes Ontario, Erie, and Huron. But notice how oddly the line darts northwest through Lake Superior and then suddenly turns and drops abruptly to the southwest. And notice how neatly the obtuse angle gathers Isle Royale into the crook of its elbow!

This erratic line, so they say, was due to the final stand of Ben Franklin—Ben insisting to the last that Isle Royale be included in American territory. Some say that Franklin's demand was prompted by a motley gathering at his summer home in the Parisian suburbs. Several inspired American businessmen had brought three Chippewas and an interpreter all the way to Paris to tell Franklin of the wondrous copper deposits of Lake Superior with special emphasis on Isle Royale's spirit-haunted mines. Whether any Chippewa had a hand in the matter isn't too important. There is little doubt that Franklin's patriotic eye was eternally peeled for natural resources, and that there was such interest in Isle Royale that it (plus the nonexistent Isle Philippeaux) was the only island of the Great Lakes specifically mentioned in the Treaty of Paris in 1783.*

For the next fifty years the growing pains of the young United States were too acute and immediate for its citizens to take much interest in its distant back yard. Some forgotten senator in 1800 induced Congress to order an agent appointed to "collect material

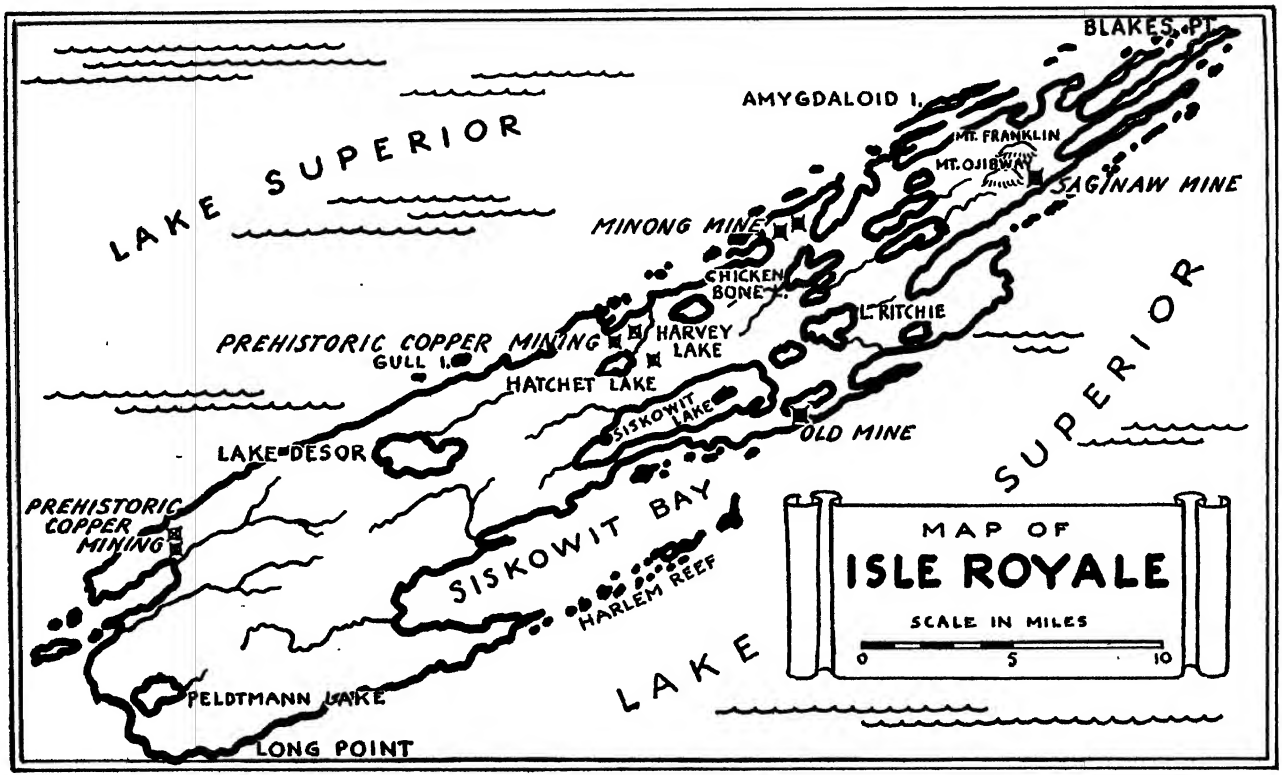
* Keweenawans have all sorts of versions of this tale of Franklin and Isle Royale copper and will tell them to you with varying degrees of seriousness. The author's favorite Copper Country addition to the saga concerns the conversation between Lord Rockingham, Prime Minister of England, and the forthright Ben during a party in London held in celebration of the Treaty. Ben, it seems, twitted the peer over Lake Superior boundary line, remarking that he (Ben) knew all the time Isle Royale was practically inlaid with copper. Lord R., as all the British, was heartily sick of the two years of argument and remarked: "Mr. Franklin, I don't give a damn if that island is solid copper. If the treaty conference had lasted another week you Yankees would have insisted on running your infernal boundary line around Ireland."

and information relative to the copper mines on the South side of Lake Superior." But another war was in the offing and the matter was forgotten, as was the Copper Country, until 1822. That year a powerful lobby of New York opportunists succeeded in getting a hearing before the Seventeenth Congress with a "Proposition to Work the Ancient Copper Mines of Lake Superior and Along the Ontonagon River." They requested—and, it appears, nearly secured—ore rights to forty thousand acres of mineral land on the promise to repay the privilege with "copper sheathing for the Navy." The "proposition" apparently died in cloakroom discussions, for, though it was brought up again before the following Congress, nothing more was heard about it. The history of Michigan copper hung in balance for a time but as it turned out, it was twenty years before the Keweenaw was overrun with prospectors.

The significance of this proposition of 1822 was its reference to "ancient copper mines." There they were, popping up again two hundred years after the French had first listened to Indian tales of spirit-haunted mines. And the legends of these ancient copper mines would pop up once more a decade later to help the nation contract copper fever.

According to archeologists, long before Champlain, Columbus, and perhaps even Leif Ericson voyaged to North America, some forgotten race staged a rush, a boom and carried on extensive copper mining on Lake Superior. They came to the Copper Country, worked thousands of pits for an indeterminate number of years, took out a vast amount of the red metal, and then disappeared.* These prehistoric copper miners, in fact, are one of the major archeological mysteries of North America.

* Adolph Froehlke of Oshkosh, Wis., presented some rather surprising theories concerning the ancient mining activities, in a talk given before a Kiwanis club. According to the newspaper accounts, he calculates that thirty thousand prehistoric miners were engaged five hundred years in taking out between thirty and fifty million tons of copper. Since even the smaller quantity is more than three times the amount of red metal mined in the entire Copper Country by modern methods during one hundred years, the statistics are open to question. It is also his theory that the pre-Columbian copper miners were Phoenician slaves. Since no reply was received to the author's query, it is not known how thirty thousand or any number of Phoenicians reached Lake Superior.


BLAKES PT.
AMYGDALOID I.
MT. FRANKLIN
MT. OJIBWAY
SAGINAW MINE
LAKE SUPERIOR
MINONG MINE
CHICKEN BONE
L. RITCHIE
PREHISTORIC COPPER MINING
HARVEY LAKE
GULL I.
HATCHET LAKE
SISKOWIT LAKE
OLD MINE
LAKE DESOR
PREHISTORIC COPPER MINING
SISKOWIT BAY
HARLEM REEF
PELDTMANN LAKE
LONG POINT
LAKE SUPERIOR
MAP OF
ISLE ROYALE
SCALE IN MILES
0
5
10

You can still see the ancient mines in the nation's newest national park, Isle Royale. Recent parties of scientists have searched the isle carefully and systematically, and they estimate that there are at least ten thousand of these ancient pits—and several hundred more like them on the mainland in the Copper Country proper. The mystery of these miners is their complete disappearance. They left behind no household utensils, no domestic valuables or any other possession which might give a clue to their identity. Nor have any aboriginal burial grounds or skeletons ever been found within miles of the copper region. Whoever the ancient miners were, they appeared in the Copper Country every spring like the tourists, and departed with all their baggage, even their dead, every autumn.

Probably the identity of a lost race and the problems of from-whence-to-whither should be left strictly to ethnology and archeology. Followers of these rather inexact sciences carry on a constant war amongst themselves and any outsider who speaks up is likely to get hurt. A brief and timid glance at the matter gives the impression that the pre-Columbian copper miners have earnest protagonists who believe separately that the miners were ancestors of North American Indians, Mound Builders, Aztecs, Eskimos, or Mongolians on the loose. If the reader cares to go into the matter he will find further candidates, such as Algonquian or Siouian Indians. However, the pre-Columbian miners, whoever they were, *did* give Michigan copper much of its "build-up." There are several items about them which should be reported.

Long before Samuel Champlain accepted his gift of copper from the Algonquins, almost every other white man who landed on North America received or took a specimen of Michigan copper from the Indians. Herrera, historian of Columbus' fourth voyage, tells of a trading canoe that put out from Yucatan with "small hatchets, small bells, and plates made of copper." Bernal Diaz, chronicler of the Cortez blitzkrieg into Mexico, looked on Lake Superior copper when he saw that "each Indian, besides his ornaments of gold, had a copper ax." And unknowingly, the long list of adventurous men—Cartier, Allefonsce, Verrazano, Raleigh, Herriot, Ribault, and Newport—who landed along the Atlantic

coast from Florida to Canada, reported Lake copper in the possession of the Indians.

Why would copper in the possession of Mexican Indians necessarily be Lake Superior copper? And how would it get so far from home?

Indisputable mineralogical fact is that, until about ten years ago, the Michigan Copper Country was the only place on the face of the earth where copper had been found in its pure, workable, native state. Everywhere else that the metal had been discovered in quantity, Nature saw fit to compound it with other elements such as sulphur, carbon, and chlorine and in so complicated a manner that the metal is usable only after smelting and refining. Moreover, expert metallurgists even today have their headaches in purifying the difficult copper ores of Arizona, New and Old Mexico. It is unlikely, to the point of improbability, that even so advanced a civilization as that of the Aztecs included metallurgy among its achievements. Thus, unless the prehistoric North Americans had some secret ore body of pure copper, every object of copper which the white explorers encountered simply had to come from Lake Superior.

Archeology has a ready explanation for the wide distribution of the metal. A number of ancient burial mounds were opened in Wisconsin recently, and they produced conclusive proof of widespread trade amongst all North American aboriginals. The mounds yielded a variety of objects made of copper, ranging from knives to fishhooks and needles—all of them valuable articles of trade. And along with these copper artifacts were other items whose geographical source is unmistakable. There were articles made of a peculiarly ivory-colored flint found only in the Ohio River basin; knives made of obsidian, a volcanic material unknown in any region nearer Wisconsin than Yellowstone National Park. Some mounds turned up conch shells which properly belong to the Gulf of Mexico and definitely to salt water. And, to complete the evidence, innumerable ceremonial pipes were found, carved with designs totally different from any used by Wisconsin aboriginals. It could be that the men who built the mounds spent their summer vacations mining copper out on Isle Royale. But there's

no doubt that the Wisconsin Indians were enterprising merchants.

For more than three hundred years copper trails had beckoned men to the south shore of Lake Superior. The tentative explorations of the French and English were continued by the young United States in the same tentative manner. In 1819 and during the 1820's, Henry Schoolcraft and General Lewis F. Cass led several expeditions to the Copper Country. They traveled up the Ontonagon River to inspect the solid copper boulder which, by this time, had become an explorer's "must." The *Annals of Congress* took official notice of these visitations, but as usual the matter went no further.

In fact, these expeditions, explorations, and brief official notations might have gone on until the nation finally grew up to the Copper Country as the pioneers pushed the frontiers before them. Something extraordinary had to take place to provoke a copper rush well in advance of necessity and orderly progress.

CHAPTER III

COPPER FINDS ITS COLUMBUS

IN THE EARLY DAYS of the last century the young United States surveyed her wildernesses with a canny eye. Though every acre west of the Appalachians was a promised land, wise men headed straight for the Mississippi, stopping only where gentle hills and rolling prairies spelled good, black earth and fertile farms.

The copper rock that brimmed Superior was far from this pioneer path. And it might have been ignored indefinitely if a boundary squabble of unusual violence hadn't attracted undue attention to one particular outpost in a nation of outposts.

In the twenty years between 1820 and 1840 the population of the United States nearly doubled, jumping from about nine and a half millions to more than seventeen millions. Four million of these new citizens settled west of the Appalachians. The population of Indiana doubled, and that of Illinois trebled, for these states stood in the heart of the most traveled wilderness-routes. The territory of Michigan lay off the wagon roads, and pioneers who turned to this region amounted to little more than a backwoods eddy in the main flow westward.

But those who chose the wild territory between Lakes Huron and Michigan in preference to the rich prairie lands of Ohio, Indiana, and Illinois seem to have been inordinately enthusiastic about their new homeland. Transplanted easterners turned into loyal Michiganders overnight and, within the shortest possible time, were praising the glories of their new homeland with a zeal which made the few native sons seem inarticulate.

Their glowing descriptions of the Michigan territory as a "land of opportunity" not to be confused with ordinary settlements along the beaten track soon brought friends and relatives from New England and New York State to join them. In no time at all Michigan teemed with patriots of the sort we would call live

wires and boosters. Soon it became a land of opportunists as well as opportunity.

When the boosting began, about 1830, Michigan had a population of 31,000. Four years later it had grown to more than 87,000. This was a thousand more than was necessary to form a state. And there wasn't a man, woman, or child in Michigan who didn't know it.

The required 86,000 had scarcely been reached when a convention was called for May, 1835, in the thriving town of Detroit. Here the uninhibited Michiganders wrote a free and easy constitution, calculated to push a new state into national importance with utmost speed. In fact, the state of Michigan was born without benefit of Congress, which should at least have been asked to pass enabling legislation.

More than this, the leading citizens who met in the Detroit convention had most original ideas as to Michigan's southern boundary lines. They blandly voted that the new state should include a wedge-shaped section of land at the extreme west end of Lake Erie—an area which just about comprises the city of Toledo today. It wasn't mere acreage which interested the convention, for there was more than enough land for 87,000 souls between Lakes Huron and Michigan. The boosters had their eyes on the mouth of the Maumee River, which was to become the northern terminus of the Wabash and Erie Canal, then building.

Michigan petitioned statehood in the midst of the great canal age of the United States. The Erie Canal had already brought great prosperity to upstate New York, and the canal system of Pennsylvania was accomplishing wonders for that state. It was universally believed that no state could grow and prosper unless it was well connected with canal systems. Hence, Michigan's desire for the land which included the mouth of the Maumee.

Boundaries and boundary arguments were an old story and a continual headache to Congress. As the population moved westward, new states and territories were created to protect and govern the hordes of settlers. Invariably, the newer sovereignties and the older adjoining ones argued bitterly as to which owned what, and how much was whose. National politics were often involved

in these territorial disputes, and Congress, still hard put to keep peace among established states, was faced with the problem of dealing out equitable justice to the new provinces.

Michigan's request for the Toledo area and the mouth of the Maumee was typical of the era. And though the land was, even then, a part of the state of Ohio, Michigan's claim was based on reasonable grounds. The Northwest Ordinance, passed by the Continental Congress in 1787, clearly fixed the boundaries of the three to five states into which the Northwest Territory was to be divided when time and population demanded. The Ordinance stated that the southern boundaries of what came to be Wisconsin and Michigan should be a straight line running east and west at the lower tip of Lake Michigan. If the line was drawn true, Michigan was entitled to the Toledo area plus a strip of Ohio a number of miles to the south.

This Northwest Ordinance was one of the most important pieces of legislation enacted by the Continental Congress. It was subscribed to as "articles of compact, unalterable unless by common consent." But later Congresses had seen fit to break this "solemn compact" in the interests of Indiana and Illinois. Chicago grew up ignoring boundary lines and ordinances, and the compact of 1787 was obligingly adjusted to make the thriving village a part of Illinois. And later, in another adjustment, Indiana was granted an additional ten-mile strip running clear across her northern limits as fixed by the Northwest Ordinance. Thus a twofold precedent was established for breaking the "unalterable" compact.

But the founders of Michigan had to reckon with more than precedent. They were up against practical politics in Washington. Andrew Jackson, who would finish his second term in 1837, was anxious to have his Democratic principles continued through his protégé, Martin Van Buren. Jackson's plans for a political heir were opposed not only by a presidential candidate from his home state of Tennessee but by William Henry Harrison of Ohio.

Obviously, this was no time to antagonize the voters of Ohio by leaning over backwards to favor a petitioning territory. Michigan was told she was welcome to the Union—minus the Toledo area.

The leading citizens frothed at the mouth and, in September, 1836, made their indignant way to Detroit and held a second convention. This was more a council of war than a convention, for, aided and abetted by the entire population, they voted unanimously against joining the Union unless the Toledo area went with statehood. It looked as though Michigan would secede from the Union before it had been admitted.

Feeling ran so high that the entire voting population of Detroit stood ready to march in a body on the miserly state of Ohio. Sixty-odd miles was too far for the citizenry to travel, however, and so the bitter Detroiters had to be satisfied with dispatching a company of militia to do battle for them. The troops reached the mouth of the Maumee towards the end of the month, and took a stand on the west bank of the river. An Ohio "army" stood embattled upon the opposite shore. Now civil war was imminent. Historians have been pleased to call this affair the Toledo War although there were no fatalities, no bloodshed, and little if any shooting. The two "armies" were content to shout insults across the river while waiting for Congress to reconsider.

Political manipulation and the fact that Ohio had been a state for thirty-four years, overruled Michigan. Once the leading citizens saw their cause was hopeless, they became practical statesmen. A final convention was held in December, and it agreed to accept the ruling of Congress. Michigan was admitted to the Union as the twenty-sixth state in January, 1837.

The defeat at Toledo was soon forgotten, but it played a vital part in the development of Michigan. Indirectly, it gave the new state copper.

A benign Congress, patting the infant state on the head, granted it 25,000 square miles of unknown and almost unexplored wilderness between Lake Michigan and Lake Superior, extending from St. Mary's River and Sault Ste. Marie on the east almost to the west end of Superior, with much of the latter part lying above the Wisconsin Territory. It is the region known today as the Upper Peninsula of Michigan.

Wisconsin had been made a territory in 1836 and, although she was not quite ready for it, statehood was her goal. Her leaders had already disputed the fixing of the Mississippi as her

western boundary and had loudly shouted "Robbery" when Illinois was granted the land above Chicago. Now she angrily pointed out that giving Michigan so much of the Upper Peninsula was another violation of the Ordinance of 1787. The territorial governor, Henry Dodge, sent a blistering note to Congress which a senator of the time said, "diplomatically declared war on Great Britain, Canada and the United States."

Michigan, on the other hand, her pride still smarting from the Toledo decision, was contemptuous of the Upper Peninsula which was to bring her such fabulous riches in copper, iron, and timber. She proclaimed long and loudly that she wanted no part of this wilderness up along Lake Superior.

This uproar in the upstart West resounded in the populous East and focused attention on one particular wilderness in a nation of many wildernesses.

At a time when Michigan viewed the Upper Peninsula with a jaundiced eye, a young physician, Douglass Houghton, came forward and proposed to explore it.

"Let me go and see what's up there," Houghton pleaded. "We know nothing of the region except its shores. Let me search inland for its copper treasures. Surely there's something to rumors which persist for centuries."

Houghton was brought west from New York by culture-hungry Detroit to deliver popular lectures on botany, chemistry, and natural science. His small stature, mild blue eyes, and relatively frail constitution contradicted by tremendous energy never failed to astonish Detroiters. They liked him at once, and they had confidence in him. When he hung out his shingle as a physician and dentist a practice grew up at once.

At the time he proposed to explore Michigan's "sorrow," the unwanted Upper Peninsula, Houghton was barely twenty-nine; yet he had already made several trips to the Superior region. In 1830, shortly after his arrival in Detroit, he accompanied the Schoolcraft expedition as botanist and surgeon. On this trip he had actually seen the Big Boulder of solid copper lying on the bank of the Ontonagon River and his orderly, yet inquisitive scientist's mind regretted that there was no time to explore the surrounding region. Houghton was not a geologist, but his ability

to observe what other men overlooked, his studious nature, and his earnestness easily made up for his lack of geological training.

Stevens T. Mason, the first governor of Michigan, was a great friend and admirer of Houghton's, and believed him to be a young man who never talked unless he had something worth while to say. Nevertheless when Houghton came to Mason with his plan to explore the Superior region, the governor listened more as a friend than as a state official. He did not believe the earnest little man would actually uncover much of intrinsic value, but since Michigan had the land there could be no harm in learning what was on it. Although other more urgent state matters must have occupied Mason's mind, he created the new office of state geologist and badgered a reluctant legislature of farmers and storekeepers into appropriating $3,000 for the first year's work. Thus, unwittingly, the Michigan solons enacted one of the most important pieces of legislation ever written into the records.

All through the summer of 1840 and late into the fall, Houghton and a small party of assistants explored the Copper Country wilderness. They coasted its shores in fragile canoes, rafted across its streams, and searched its rocky formation in an effort to verify or disprove, once and for all, the legends which said this was copper ground. Their exploration continued until early snow threatened to blanket the country, and winter was about to set in when the party returned to Detroit.

Houghton had found copper on Lake Superior and evidence that it had been deposited in great, commercial quantities. Near what was to become Copper Harbor on the Keweenaw Peninsula, he found a vein of green copper carbonate. Farther south a charge of powder had turned up a chunk of pure, virgin copper, and he had found small nuggets of pure silver intermixed with the rock. Nevertheless, with a scientist's inherent caution, the hesitancy to declare a thing so until exhaustive proof is found, he wrote his report of the expedition with guarded restraint. It was not until December 26, 1840, that it was finished and given to the State Legislature. Beyond doubt, it was a model of reservation, qualification, and understatement.

When the legislators heard Houghton's statement that "ores of copper are abundant" their ears pricked up; but their interest

waned when they heard that skill, money, and organization must come before copper fortunes could be taken from the south shore of Lake Superior. It bored them to hear over and over that the Copper Country was a capitalists' country and not one for individuals. This, they told one another, was just what they had suspected in the first place. What if there was copper way off there at the end of nowhere? They certainly weren't going to mortgage their farms to hunt for it.

But not so the rest of the country. The East and the South paid no attention whatsoever to Houghton's warning that the Lake Superior region could be profitably developed only on a large scale. Only one part of Houghton's report was remembered.

With a single blast I threw out nearly two tons of ore. With this there were many masses of native copper from the most minute specks to one of about forty pounds in weight.

Forty pounds of solid copper in one chunk—turned up by a single blast and from a vein outcropping right at the surface!

What further proof did a man want? There might be mountains of solid copper up North after all. Certainly there must be rich mining lands. And it would be first come, first served.

A few hardy prospectors forced their way overland through the pine wilderness and filtered into the Keweenaw in 1841. A few more came in 1842; but it was in 1843, after Congress had cleared the way by ratifying a final treaty with the Chippewa, that the real rush began.

The Chippewa, who for generations had stalked game in the forest of the Keweenaw, offered no resistance when the Great White Father in Washington asked them to move on to other hunting grounds. They smoked a pipe of peace, enjoyed a great deal of ceremonious palaver and ceded, with no further ado, 30,000 square miles of the Upper Peninsula to the land-hungry United States. This ceded area included 300 miles of Lake Superior shore line and finally released to the white men millions upon millions of dollars in timber, iron, and copper.

The ice had hardly melted in the spring of '43 when twenty prospectors landed at Copper Harbor at the tip of the Keweenaw from the schooner *Swallow*. And as fast as the schooners *Algon-*

quin and *Astor* could tack and beat their way westward, more and more would-be copper kings appeared. They sneered at Douglass Houghton, called him a fool scientist who wouldn't know how to spend a copper fortune if he found one.

Houghton ignored them all and continued his explorations throughout the next two years. When Michigan would give him no more money for his expeditions he went to Washington and got some from Congress. He piled evidence on evidence to prove the immense potential wealth in the Copper Country. And now, working for the Federal government, his later reports were read before Congress, and word of Michigan copper traveled from Washington to every state and territory in the Union.

Houghton himself got nothing but death for his pains. He was paid only a nominal salary for five years of unceasing and tireless effort. He worked unselfishly while a wilderness was turning into a boom mining camp. He saw his carefully qualified statements twisted and turned, used as the basis for unsound if not fraudulent promotion. A mining district his scientific zeal had founded, a district which eventually produced $332,000,000 in dividends alone, awarded him not even a copper penny to leave to his heirs.

On October 13, 1845, Houghton's boat was swamped just off Eagle River by one of Superior's sudden furies. All but he and one other member of his party reached shore. The icy waters held his body until the following spring as though to show their anger at the one man out of the hundreds who released the copper wealth Superior had guarded so jealously for centuries. A modest monument to Douglass Houghton stands today near Eagle River, and the principal city of the Copper Country is named for him. Save for these minor memorials the father of United States copper mining is forgotten.

If Houghton could have left a last message it would undoubtedly have expressed again his deep regret that it was largely his reports which sent hordes of inexperienced prospectors on their futile journey to the Keweenaw. He never ceased to reproach himself that his carefully worded warnings proved as ineffectual as Mercury's instruction to Pandora.

CHAPTER IV

WHITE PAWNEES

DOUGLASS HOUGHTON'S restrained reports produced prompt and wonderful results. All those characters who were to become familiar to every boom camp of the West were attracted to the Superior country. In fact, the pattern for an endless succession of American mining melodramas was cut in copper on the Keweenaw.

Boom towns quickly sprang up at Copper Harbor, Eagle Harbor, Ontonagon, and a dozen lesser ports where the scurrying little schooners dropped anxious cargoes of prospectors. Loose ladies and saloonkeepers appeared as if by magic to set up shop on Superior's south shore line. Top-hatted, lace-frilled gamblers departed their Mississippi side-wheelers and leapt over hundreds of wilderness miles to deal cards under canvas in the new El Dorado. Yankee storekeepers dressed in homespun landed with pioneers garbed in buckskin. Soft-palmed clerks, whose heaviest work had been lifting ledgers and pushing quill pens, came ashore with picks slung over rounded shoulders. Tidewater easterners arrived in fishermen's outfits and made smug jokes about coasting fresh-water Superior in search of copper. Others were ex-lawyers, ex-preachers, ex-husbands, ex-everything you can think of except expert miners.

Every man in this ill assorted horde set out for the Big Cold Lake with the avowed intention of returning home with a copper fortune. Yet once in the Copper Country, none seemed to have any idea of how to begin the search for cupriferous treasure.

They had talked glibly enough of solid copper mountains and boulders aboard ship. But their illusions were soon punctured by guffawing prospectors who were veterans of two-weeks standing. These "old-timers" took perverse pleasure in handing out unpalatable truths and amateur scientific advice. The newcomers listened wide-eyed to the hot-stove geologists, the cracker-barrel

mineralogists, and the would-be mining engineers who overflowed every barroom from Ontonagon to Copper Harbor. And the bartenders were fountainheads of advice and suggestions. They offered sage comments with the morning eye-opener, gave pointers on prospecting with midday apéritifs and had unraveled the whole complicated science of mining by the time a newcomer was taking his nightcap.

Eli Wade, a former New York dry-goods clerk turned Eagle River bartender, was the acknowledged expert of experts in the early days of the copper rush. Eli had spent his life with ginghams and woolens, but he now talked glibly of "ores," "veins," and "oxides." It was said that he could hold forth for three hours without once repeating himself.

This complicated terminology naturally bewildered men who had left home expecting to gather fortunes in uncomplicated chunks of metal. But even though they were unable to comprehend the strange jargon the newcomers eventually concluded there were three approved methods of hunting the red metal on Lake Superior.

The first was more like a grimly determined game of blindman's buff than anything else. It was followed by the diehards—those prospectors who, while conceding there were no solid copper mountains in this pine-crested country, still hoped there might be one or two copper-inlaid hills. These hardy optimists searched blindly, following only their noses. They stumbled through woods, sloshed through swamps and shinnied up rocky bluffs with dogged perseverance. Those with a modicum of common sense followed the course of rivers and creeks where they might expect to find veins exposed by the action of water. Some who had heard tales of the prehistoric miners searched the forest floor for depressions and low places which might prove to be pre-Columbian copper mines—a ready-made bonanza.

Those who had both common-sense and some knowledge of mineralogy watched for the green stains on dampish rocks which indicated the presence of copper near the rock. Others looked for outcroppings, blasted these with black powder, and examined the fragments for copper sparkles. In the latter case "salivating" or

spitting on the rock helped bring out the metal. An outcropping which "salivated well" might mean copper, in chunks, beneath.

The variants of these prospecting methods as adopted by simon-pure amateurs were often enough ridiculous. Every day a dozen or so neophytes staggered into the boom towns triumphantly brandishing chunks of copper and announcing the discovery of fabulous mines. Their specimens were almost invariably float copper: fragments the glaciers had torn from outcroppings and strewn at random throughout the Superior region. The rank amateurs who followed watercourses were apt to mistake nuggets of placer copper for indications of buried treasure. They dug tunnels into the river banks in search of the source of the placer nuggets, which actually had been carried downstream by ice or spring freshets. The more excitable among the embryo prospectors saw a prehistoric mine in every moose-wallow and dug frantically wherever the surface appeared slightly dented. And those amateurs who searched for veins or salivated the outcroppings blasted away at the first stretch of jagged rock which tripped them up.

Probably the high point of this early damn-foolishness was marked by the efforts of an unnamed Virginian. For no known reason, he selected the sheer face of a six-hundred-foot greenstone bluff as the site of his mine. After announcing his plans in a Copper Harbor bar and downing several drinks to success, he let himself down the bare wall in a bosun's chair and proceeded to pick away at the solid rock, suspended several hundred feet in mid-air. Copper Country citizens who tell this story suggest that the prospector may have been an early Gutzon Borglum intending to chip out a lasting monument on the face of the greenstone.

Absurd and ridiculous as it often was, this early hunt for red metal was not wholly discouraging. Almost every prospector found some copper, though seldom enough to repay his strenuous efforts to search it out. And while the Keweenawans of the early 1840's may have been tenderfeet, their promised land was distinctly not a tenderfoot country.

The copper (no matter how they searched for it) was buried in the midst of deep woods, green and cool but heavily timbered

and tangled with undergrowth. The prospectors hacked their way as they went and found themselves stalking the metal much as a hunter stalks his deer. It was no easy task to pack tools, powder, and provisions over this rough terrain. Cutting a way through morasses of tamarack and white cedar was so difficult that a prospector from Florida wrote: "Even in drier seasons you sink to your knees in moss and decayed matter—it's as bad or worse than the Everglades."

And few prospectors, no matter from where they hailed, had ever seen such swarms of black flies and mosquitoes as those which harassed them in the Copper Country. The mosquitoes, they cheerfully called "Keweenaw eagles"; but the black flies were so pestiferous that during the second year of the boom, the experienced kept out of the woods during July. A Sault newspaper of August, 1844, explained that these insects were worst in early summer and remarked, "Now that the black flies have subsided, a rush of prospectors has left for the Keweenaw."

But the mosquitoes and black flies were not the only pests to draw blood from boom-day prospectors. A by-product of the first United States mining rush was the White Pawnees—among the greediest camp followers who ever fed on honest prospectors. They were not, as the title suggests, Indians, but a breed of white opportunists who knew nothing about mining copper and cared less. They descended on the Keweenaw to take advantage of the primitive and inadequate mineral laws of the time.

In the early 1800's the lead and zinc diggings along the Mississippi in northern Illinois and southern Wisconsin were the nearest approach to an important American mining district. Considerable metal was grubbed from shallow workings in this region —so much that the so-called Lead Laws were enacted in 1818 to protect prospectors and miners. These laws were based on old Spanish statutes under which King Philip had granted mineral rights and levied a percentage of the product for the Crown. The Americanized version of the old code empowered the Secretary of War to issue permits or temporary leases for mineral land. The prospector carried a permit with him and, once he found a likely location, was expected to file a description of his claim with the War Department. Under certain conditions, the pros-

pector agreed to pay from 6 to 10 per cent of the metal he mined as rent.

The Lead Laws, being the only applicable mineral laws on the American book of statutes, had to serve the Copper Country during its first boom years. The War Department, in an effort to simplify matters, set up mineral agencies at Ontonagon, Copper Harbor, and the Sault. The permit holder could drop in at the most convenient of these, present his permit, and have a description of his claim recorded in the War Department records. In theory the system worked well enough.

Unfortunately, your copper prospector of the 1840's was a quick-trigger dreamer who set off without bothering to find out how he was to gain title to whatever copper riches he might find. He could have obtained a permit as easily as we secure a packet of vegetable seeds: simply by writing to Washington. But if he arrived in the Keweenaw empty-handed he had to wait endless weeks before a dog-team letter carrier finally brought him his permit. The White Pawnees, on the other hand, had obtained permits before they left home; in fact, the possession of a permit or permits was their sole reason for coming to the Copper Country.

The Pawnees were either political hangers-on from Washington or agents of Washington politicians who had wangled permits but wanted no part of the arduous journey to Lake Superior. The War Department rule was one permit to a customer; but, then as now, the politicos managed to side-step mere rules and the pockets of the average Pawnee bulged with these all-important documents. For example, it would seem rather more than coincidence that the Lake Superior Copper Company, promoted by Tyler's Secretary of the Navy, David Henshaw, secured enough permits to register forty square miles of choice mineral land.

Since the permits were issued in blank and were transferable from one person to any number of others, a lively buying and selling trade in permits was inevitable.* Shortsighted and impatient prospectors had to pay whatever price was asked, and as the demand grew the price rose accordingly. The Pawnees,

* Charles Lanman, an important writer of the time, visited the Keweenaw during the permit days and reported that at least 500 men in Copper Harbor alone were engaged solely in permit speculation.

between sales to prospectors, haggled and bargained with one another. Every boom-town bar became a bourse, with the bartenders arbitrating all disagreements. The first profits in the Copper Country, in fact, weren't produced from the trap range. They were made in permit speculation.

For the first few years a good many speculators seem to have overlooked the point that the possession of a permit guaranteed absolutely nothing. It was simply a piece of paper until it was used to register a location at the mineral agency. About 1845, it suddenly occurred to the Pawnees that they had better put their permits to use; every day that passed left less and less mineral land unclaimed. Then it was that the wily, former city slickers acquired their derogatory title, White Pawnees.

Their practice was to lure prospectors who had just reappeared from hungry and wearisome weeks in the woods into grogshops and ply them with free forty-rod. The Pawnee would slap the prospector on the back, throw a matey arm around his shoulder and otherwise "paw" him. Hence the title. Their purpose was, of course, to obtain information about likely mineral land the prospector might have discovered. Then the Pawnee would hasten to the mineral agency, with a fistful of permits and register a number of claims on near-by land. If the prospector hadn't yet gotten around to recording his location, the Pawnee would jump that claim as well. There is, of course, no record of how much land these fawning idlers managed to steal, but the acreage must have been considerable.

Naturally, honest prospectors hated all Pawnees most cordially and delighted in giving out false information in exchange for free forty-rod. Often a group of prospectors set out purposely to mislead an unwary Pawnee. Those in the plot gathered around a friend just returned from a foray into the swampy wilderness and pretended to be astounded by his good luck. As they expected, their noisy congratulations soon attracted every Pawnee in town and the entire group was deluged with invitations to free drinks. After appropriate hesitation, prospectors and Pawnees moved in a body to the nearest saloon where the prospectors insisted on talking about the weather while the Pawnees tried to talk prospecting. Not until everyone had his fill could the boys

be coaxed to loosen up on the supposed bonanza. Little by little, they gave out information until finally the Pawnees disappeared in the direction of the mineral agency. The practice of this pleasant deception is one reason why old mineral agency records show claims so strangely filed in the middle of inland lakes, on the top of bluffs, or in the minerally barren sandstone areas.

The permit system created the loneliest job in all the lonely Copper Country. The Lead Laws required that a watchman be in charge of mineral properties at all times to point out the boundaries. Dead-broke prospectors and penniless adventurers were glad to hire out for this job at $20 a month and tobacco. They set up rude huts built wigwam-style of saplings and birch bark. Their beds were blankets spread upon a mattress of hemlock boughs. They kept a fire burning constantly in the center of the earth floor with the smoke escaping through a generous hole in the roof. The fire burned the year round—in winter for warmth and in summer to discourage mosquitoes. Simmering over the fire was an everlasting stew of beans and salt pork, bolstered occasionally with a chunk of venison. No writer of the early days fails to mention the delight with which these watchers greeted the rare visitor. Nevertheless, these location watchers were handsomely repaid for their lonely vigil. Many of the claims they guarded were never developed; a good many never even explored. They rebuilt their first rude shelters, sat tight, and when the legal period was ended claimed the land by squatter's right. Later, other mining companies paid well for property thus acquired.

It was soon evident that for a number of reasons the Lead Laws must go. For one thing, the amount of land granted under each permit simply had to be reduced. Originally, each permit gave the holder a lease on nine square miles of mineral land. Such generosity was all very well for the vast prairie lands of Illinois and Wisconsin, but it was prodigality on the tiny Keweenaw Peninsula. The little thumb of land could be given away in no time. Congress thereupon reduced the amount to a grant of one square mile. But this was still makeshift as far as eastern mining promoters were concerned. The Lead Laws granted a lease for only nine years (an initial lease of three years, renewable for

two more like periods). Nine years is an extremely brief period as copper mining goes; but, worse than brevity, the Lead Laws didn't state who would own the shaft houses, mining machinery, and indeed the mine when the nine-year period was up.

Understandably, the state of Michigan raged at the Lead Laws from the earliest copper-boom days. Quite naturally, it objected to a system whereby slips issued in Washington were good for parcels of land lying within its boundaries. It was especially irate at the thought of eastern politicians using permits as a form of patronage. Moreover, the Copper Country's growing and somewhat unruly population needed a local government; yet there was no money to pay for governing. Michigan couldn't tax mineral land still under the jurisdiction of the War Department.

Congress was reasonably sympathetic, but at the time was harassed by land disputes all up and down the nation's frontiers. The rights of preemption had been argued for twenty years and would be argued for years to come. While it was generally agreed that the Lead Laws must go, Congress hesitated to put through special legislation, fearing that such action would set a precedent which might cause trouble elsewhere. The legislators sighed with relief when the commissioner of public lands discovered a loophole which would settle the land troubles on Lake Superior.

The Lead Laws, the commissioner pointed out, had only to do with lead; nothing at all was said about copper. Congress eagerly took advantage of this technicality and voted that control of Michigan mineral lands should pass from the War to the Land Department. The first move of the Land Department was to offer Copper Country land for sale at $5.00 per acre granting those who already held land under the permit system the first right to purchase. This price, however, proved too stiff an ante in the mining gamble, and it was then reduced to the homestead rate of $1.25 per acre. Except for a lengthy period of argument over impinging claims and the numerous inaccuracies in mineral agency records, the permit days, the Lead Laws and the White Pawnees passed from the Copper Country picture during 1846.

Thereafter, businesslike mining enterprises could risk capital with the odds considerably greater in its favor. Large sums could be invested in exploration and development, and expensive ma-

chinery could be purchased, with some confidence. Now, no matter how barren the land eventually proved to be, at least a mining corporation could be sure that it held clear title to its property.

But permanence is not necessarily much of an asset in a mining district. While the first, mad boom days were passing, all was not well in the Copper Country.

During the first three years, it was true, some highly promising mines were developed from lucky finds. The fabulous Cliff Mine, so the story goes, was discovered when a prospector slipped down the face of a greenstone bluff and was painfully injured behind by a projecting chunk of solid copper. The booming Copper Falls Mine was opened after a sharp-eyed prospector glimpsed a seam of water-polished copper glistening beneath the rippling waters of Owls Creek.

Only a handful of copper hunters, however, were fortunate enough to find locations that brought hard cash from mine promoters. Most prospectors had nothing more to show for their time and effort than a few souvenir chunks of red metal. Early mining companies fared little better. Veins which looked rich at the surface, had a way of pinching out just when the future seemed brightest.

Prospectors and promoters shook their heads in weary bafflement. And back East wiseacres said, "Any man in his right wits can tell that Superior country is only copper-plated!"

CHAPTER V

THE KEWEENAW VIRGIN

CHAGRIN AND MORTIFICATION would surely darken the faces of prospectors, mine promoters, and Pawnees if they could see a modern geological map of the Copper Country. The area containing copper-bearing rock is colored light green and fenced off from the pink-tinted barren areas by definite lines. Perhaps it is better that the feverish copper hunters of the 1840's never even dreamed of such a map. No knowledge at all is better than knowledge of how close one came to copper fortune only to turn aside and take the wrong direction.

Today, you can be certain where copper could and could not be found. Nowadays, the most casual tourist can grasp the mineral layout of the Michigan copper range as quickly as a schoolboy absorbs elementary geography. The range is as obvious as a magenta-tinted Illinois lying between an ecru Iowa and a chartreuse Indiana.

Unfortunately, 1840 geology was a great deal less than an exact science. And even had it been farther advanced, the geologists would have been confounded by the underground character of the Keweenaw. In fact, during the boom days, the bumbling prospector had the advantage of the man of science. Since he was not weighed down with misinformation, he accepted what he saw and acted upon it.

To begin with, science doubted the very existence of the type of copper deposited in Michigan. Copper in its pure, native * form had been found so rarely that it was considered a freak, in

* The term "native" as used by mining men is synonymous with "pure," "virgin," or "unadulterated." Michigan copper is found in a state of such purity that a chunk brought from underground could immediately be drawn into wire without smelting or refining. By accepted stands (which allow a good percentage of impurity) Lake copper has assayed as high as 106 per cent pure copper!

the same class of mineral curios as green diamonds, red sapphires, and blue rubies. The British Museum, then the largest institution of its kind, hadn't a single specimen of native copper in all its endless rows of display cases. And even those scientists who actually visited and explored the Copper Country during the 1840's were inclined to take the stand of the legendary farmer after his first sight of an elephant.

"We still don't believe it," they said.

Earnest yet doubting scientists were not the only experts to wonder at native copper. The first really experienced miners to work the Keweenaw deposits were the Cornishmen who left England with generations of tin and copper mining experience behind them. A newly arrived Cousin Jack on his first trip underground was always amazed at the sight of solid chunks of copper. Neither he nor his father or grandfather had ever seen such chunks in Cornwall. Moreover, Douglass Houghton, an open-minded man if ever there was one, mentioned the native copper in his reports but far more frequently used the phrase "ores of copper."

From time immemorial, whenever mining men thought of copper they also thought of other elements which are ordinarily found with the red metal. They thought in terms of "ores"—mineralogical and chemical combinations such as copper sulphide, copper oxide, and copper carbonate. Which is also to say, they thought in terms of smelting, refining, and purifying. They expected to extract the pure metal from its adulterants.

No wonder Michigan's strangely pure metal baffled all who saw it, from Cousin Jack miners to the most knowing scientist. Nothing like it had ever been seen before. Not until the 1920's, when a similar deposit was developed in Coro Coro, Bolivia, were mining men able to locate a commercially important deposit of native copper anywhere else on the face of the earth!

The prospector, in his sublime ignorance, cared not a whit for high-sounding terms like "sulphurets" and "oxides." He had come north to seek copper mountains and stayed to hunt solid boulders and veins of the metal. It didn't matter to him if an outcropping of pure metal was contrary to theory, nor did he care how freakish the thought of a native copper mine might be

to science. In fact, when his searchings discovered instances of the Keweenaw anomaly, he took great pleasure in showing them to visiting scientists.

The scientists' usual answer was, "Perhaps there is *some* native metal here, but definitely not in commercial quantities."

The discovery of a solid mass of copper, seventy feet beneath a greenstone bluff at the Cliff Mine deflated another explanation for the presence of native metal in the Copper Country. Scientists had said it had been brought from somewhere far to the North by the glaciers. And the matter of quantity was settled shortly afterward at the Central Mine. The Central took out so much native metal during its first year that the mine showed a comfortable net profit on its first twelve months of operation—an unheard-of thing in copper mining. If there were any remaining doubts, these were cleared up once and for all at the Minesota Mine.* In sinking the Minesota shaft, the miners encountered a mass of solid metal of such immense proportions that it was necessary either to cut through the mass or abandon the shaft. The result was that for some distance the walls of the Minesota shaft were solid copper.

But the mere acceptance of the existence of commercial quantities of native copper did not—by a long way—solve the problems of mining it.

During the 1840's literally dozens of shafts were put down on land which by surface signs promised fabulous returns. Some shafts were sunk on solid copper veins, others on outcroppings of richly mineralized rock. A number of shafts sunk on less promising land struck large chunks of copper beneath. But despite their highly auspicious beginnings, these shafts often ran into completely barren rock farther underground. The veins pinched out, the mineralized rock grew poor, and there were no more chunks of metal as the miners dug deeper. One week a mining crew might be laboring like wall-building Chinese in

* The single letter *n* in the name was the result, it is said, of the carelessness of a weary clerk who filled out the incorporating papers late at night by candle-light. The State of Michigan solemnly recorded the name just as the clerk had written it and the Mine, thereafter, willy nilly, was forced to misspell its title. Jim Paul, who was able neither to read nor to write, said that the misspelling was due to "bodacious ignorance."

their struggle to extract a large copper mass. Yet the very next week their efforts might produce only so much broken greenstone. The Cousin Jacks blamed failure on ill omens, the mine owners on the geologists, and the geologists on the perversity of Nature.

The Copper Country pioneers didn't know and science hadn't yet figured out that these first discoveries, towards the surface, were in reality nothing more than an afterthought of Nature. The first shafts (including the successful Cliff, Central, and Minesota) won what proved to be only a consolation prize to the main award—opened merely a side show to the main performance.

A modern geological map shows why the first mining companies were misled and why Nature's extra generosity made for so much early confusion, disappointment, and tragic waste of men and money.

The map shows a narrow corridor of copper-bearing rock running down the length of the Keweenaw Peninsula and onto the mainland for some two hundred miles. In one sense it could be called the bone of the Keweenaw Thumb. It represents the Michigan copper range. It varies in width from two to eight miles, and while copper can be found all along its length and across its entire width, some areas are so slightly mineralized that the metal is discoverable only in the metallurgist's laboratory. The mineral range, in turn, is made up of a series of parallel strips. Some are composed of vein rock and contain commercial quantities of the red metal. But separating the rich strips are others which contain only a minute quantity of copper.*

Later, when this simple pattern of strips was worked out and charted, it became possible to locate a mine by tracing and following the likely course of a mineralized strip. After the great Pewabic, Kearsarge, and Baltic lodes were discovered, a number of highly successful mines were developed by means of this

*The extreme narrowness of the range greatly increased the odds against opening a successful mine, especially in the early, unenlightened days. Although this corridor of mineralized rock widens out to about eight miles at one point the important producing mines have been located in groups within an area about four miles wide and a hundred miles long. To add to the difficulties of exploration, the glaciers left behind a mantle of overburden—dirt, gravel, and debris—which covers the range to the depth of as much as forty feet. In fact, only about 15 per cent of the entire range outcrops at the surface.

tracing process. And one had only to visit the Calumet and Hecla mines in their heyday with a dozen or more shaft houses lined up like soldiers at "right dress" to appreciate how faithfully the mineralized strips of the range parallel one another.

The copper range was gestated some eight hundred million years ago. During the course of two hundred and fifty more million years, mighty stomach troubles in the center of the earth spewed white-hot volcanic materials to the surface. These internal disturbances occurred one after another, each flow creating a new layer to lie on top of an older one. In cross section the layers look like piled-up saucers, flat in the middle and curved upwards at the edges. The flat part of this warped layer cake holds Lake Superior, in a monstrous saucerlike depression. One of the bent-up edges forms the north shore of the Lake. The other end of the layers makes up the mineral range.

Geologists still disagree as to just how Nature added the copper to this layer formation. One school holds the red metal came from above, filtering down through the rock out of solution with the waters which once covered the entire region. Another group believes the native metal was deposited as hot, chemical-laden waters ascended from underground. Whichever or whatever the actual case, the copper filled the interstices and openings in the porous, lavalike rock. Obviously, the more porous the rock, the more red metal deposited. After filling the mineral range to the brim, Nature found she had considerable pure, native copper left over. This extra metal then literally overflowed the range and poured into the fissures and crevices of the surrounding rock wherever frost or cataclysmic earth-shakings had left openings or low places.

It was this overflow copper which created the near-the-surface deposits that so confused and misled early prospectors, mining men, and geologists. Moreover, these fissure veins, as the overflow deposits are loosely called, were deposited at right angles to the true mineral range. Until this fact was known, copper hunters were apt to search in the wrong directions. Before they could hope to follow the richer trails it was necessary, so to speak, to turn a corner and search in another direction.

Had men understood the character of the copper range, they might have tapped the really important deposits earlier and the

history of the Copper Country would have been far shorter. But, like all rules, the rules of geology have their exceptions. As it happened, the exception to Keweenaw geology was illustrated before the rule.

The three greatest mines of the early days, the Cliff, Minesota, and Central, were all, paradoxically, put down on fissure veins. These lodes not only were apart from the true mineral range but ran at an angle to the pattern of parallel strips. Thus these workings were completely delusive and served to obscure and cloud the real basis of Copper Country geology. The Cliff and the Minesota, particularly, produced such fabulous amounts of red metal that they were literally the wonders of both the popular and the mining world. Understandably, science hesitated to term these mines apocryphal, knowing that it would receive only derision for its pains.

The Cliff, Minesota, and Central were known in Superior parlance as "mass mines" * (which signified, principally, that they produced only masses or chunks of copper). Their only other interest was "barrel work," that is, small fragments broken free of the rock and packed in barrels for shipment. These mining companies would have no truck with rock shot through with copper sparkles and threw this "poor stuff" out on the dump heaps. Unfortunately, the Cliff, Minesota, and Central fissure veins were the only lodes of the type which ever produced a profitable amount of red metal. Yet a host of early mining ventures thought of themselves as mass mines, and were just as scornful of mere vein rock.

For two decades, the Copper Country maintained a dogged faith in mass mines, and mining companies continued to throw what was considered low-grade rock onto dump heaps. Then, in 1852, the Isle Royale Mining Company began operations with the express purpose of working rock shot through with tiny fragments of metal. The company may or may not have known its shaft was going down on one of the highly mineralized strips of

* The term "mass" is likely to be confusing—especially in early mining reports. In general, the term applies to any chunk of solid, native copper—is still so used today. The Copper Country, however, uses it to distinguish early workings from later mines put down on the true mineral range. Thus while mass and fissure mines are synonymous, amygdaloid and conglomerate mines are entirely different.

the mineral range. Certainly the board of directors didn't realize that their innovation would open up a second and far more sensible era of Copper Country mining. But the company geologist *did* tell them that the miners were taking out a type of copper-bearing rock called amygdaloid.

"Amygdaloid" comes from the Greek, in which it means almond-shaped. To understand the term, you have only to think of a glass of champagne.

While Nature was suffering her violent gastral pains and throwing up molten lava, she was also belching up volcanic gases. The lavalike rock was in a liquid state, and the gases bubbled up through it exactly as carbonic gas bubbles up through champagne. As the lava cooled, the gas bubbles formed pockets just as if a freshly poured glass of champagne had suddenly frozen solid. The bubbles of volcanic gas, however, created cavities of irregular shapes and sizes, ranging from hardly more than pinheads to sizable pockets. In the course of thousands of years these cavities were filled with native copper, either from above or from below, in the manner already described.

The Isle Royale Mine, bear in mind, set out to win the same type of pure, native copper, which had made the fortunes of the few successful mass mines. The difference lay in mining method. All the mass mines had to worry about was freeing the huge chunks and then cutting them up into convenient sizes for shipping. But the Isle Royale and all the amygdaloid mines which followed had a milling problem on their hands. Rock shot through with tiny fragments and mere specks of metal had to be stamped to a sandlike consistency before the worthless material could be washed away from the pure metal. Mining companies working amygdaloid deposits had to build and operate elaborate stamp mills in addition to their mining plants. Once the Isle Royale Mine started working this finely mineralized rock, Copper Country mining enterprise required a great deal more capital and many more workers.

The various strips of amygdaloid rock which travel along the mineral range proved to be the most important type of deposits in the Copper Country. Better than half of the district's copper has been taken from amygdaloid beds. Even today, they're still

winning the metal from them; and, if you believe old-timers, they always will. A good amygdaloid mine is something to bring joy to the hearts of both mining engineers and stockholders. Operations run along uneventfully, the property prosaically makes copper year after year. The Quincy Mine, for example, working the Pewabic Lode, is nearing the century mark of existence and is one of the oldest mines on the North American continent. It was no idle jest which named it the "Old Reliable." In short, the amygdaloids—though goodness knows these lodes have created their share of excitement, successful mines and dismal bankrupts —might be called the "solid citizens" among the mineralized strips of the range.

The real bonanza lode, the deposit which was responsible for a tale comparable to the most exciting of mining sagas, was the incredibly rich Calumet conglomerate. The ill-fated Ed Hulbert discovered the conglomerate just before the Civil War. For a time, this type of rock was scoffed at by mining men just as amygdaloid rock had been by protagonists of mass mines.

Successful mining ventures based on the conglomerate probably did seem out of the question in the early days. It was a flint-hard mineral which defied the primitive stamp mills used for the more friable amygdaloid. But the real reason men looked askance at Hulbert's find was a familiar one: copper-bearing conglomerate in important quantities had never been known before.

The conglomerate beds were made up of boulders, gravel, and sand, the dregs of ancient lakes and seas which had retreated from the Copper Country during the glacial ages. Nature deposited native copper in the interstices in this assorted material —finally cementing it together with pure metal. The conglomerate's composition is aptly described in the miner's name for it, "pudding stone." A speciment of conglomerate * does, indeed, resemble a dessert in which the gravel and stones represent the raisins and the copper the pudding. There is, however, a great deal of figurative pudding to the ton and the conglomerate carried with it many more pounds of copper than the same quantity

* It will bear repeating that *all* Michigan copper is pure, unadultered metal. Except for highly technical differences, red metal extracted from amygdaloid and conglomerate rock is exactly the same, nor does it differ from copper found in mass formations.

of amygdaloid rock. After the Calumet and Hecla mines were developed on the Calumet conglomerate bed, the Copper Country became one of the greatest copper camps of all time.

The character of Michigan copper—pure and unadulterated—has made a very real difference in the Copper Country's physical appearance. Or rather, its character prevented changes in the scenery. Out West and in most other copper camps in the world, the red metal has not been so kind to the countryside. There was a time when accurate synonyms for "desolation" and "ugliness" were Butte and Bisbee. Stinking sulphurous gases from smelter chimneys and the choking sulphide dusts from the stamp mills shriveled up what little vegetation grew in those parts of Montana and Arizona. Miners and their families lived miserably and unhealthily in the most dismal of surroundings. Out there, Nature deposited copper in complicated compounds with sulphur and other elements. In contrast, the Copper Country foliage is still green, and its trees and forests as verdant as in the days of the pre-Columbian miners. In the course of its life, the Michigan range has produced better than eight and one-half billion pounds of red metal; and a good part of it was milled and smelted on Lake Superior. Yet, Lake copper, being so nearly pure, produced no noxious gases nor corrosive dusts, and the Copper Country never became an industrial waste land.

Occasionally, Lake copper has turned up mixed with other elements, usually to the great confusion of mining men. Pure copper when exposed to air and water turns into something else. When John Hays opened his vein of black, copper oxide, he saw the results of such a reaction. Malachite, or green carbonate of copper, and sometimes the aptly named azurite are also the result of chemical changes. For the most part, however, the virgin copper of the Keweenaw has been protected from air and water, sealed away from the elements by the rock.* The important deposits were found inviolate and maiden.

Nature was unusually generous when she deposited her copper on the Superior shore line but, being female, she did change her

*Incidentally, in Copper Country usage all material taken from a mine is termed "rock," whereas in most other mining districts—no matter what the metal or mineral involved—the raw product is generally called "ore."

mind on occasion. The Copper Country, like all mining districts, was immensely rich in some sections while adjacent areas proved unaccountably barren. Michigan copper men have an old saying which illustrates just how whimsical Nature can be.

"There's no such thing as a fair-to-middling mine on the copper range," they say. "A mine is either a bonanza or a bankrupt in this district."

The fact of the matter is that the strips of mineralized rock which run along the range vary in width, and sometimes narrow away unexpectedly to nothing. The Osceola and Centennial mining companies, for example, sank shafts on the very edges of the south and north boundaries of the Calumet & Hecla property. They confidently expected to tap the rich conglomerate bed as it continued along the range. They found the lode all right—it had grown wider than ever at the two points where the shafts were put down. But Nature, somehow, had neglected to include any appreciable amount of copper. The mines dug out a lot of pudding stone, but it was a confection made entirely of currants and raisins with no pudding to speak of.

Between these extremes of opulence and barrenness are sections of the range shot through with deceptive amounts of metal; enough to keep up stockholders' hopes, but never quite enough to make profitable mines. It was one of these delusive sections which was responsible for the Copper Country's costliest failures, demonstrating time and again the truth of the aforementioned proverb. The Phoenix Mining Company, developed on such land, initiated one of the most fruitless and expensive chases of the copper will-o'-the-wisp in all the district's history. Horace Greeley's Pennsylvania, the Delaware, and the Mendota Mining Company, all had a try at working the area where the Phoenix failed. Before the futile search was ended, twelve separate sets of stockholders and a good many millions of their cash were involved. The last to take up the chase was the Keweenaw Copper Company, which attempted to work the Phoenix land on a production basis. A forty-mile, standard-gauge railroad was built to transport large quantities of rock. But the Keweenaw Company, too, found a copper fortune a will-o'-the-wisp, and even with its locomotive was never quite able to catch up with it.

On the other hand, Nature was sometimes the most trustworthy of ladies. An old Cousin Jack mining captain, John Daniell, put a great deal more faith in Nature than her variable moods seemed to warrant. It's good to report that in at least this one instance, she proved worthy of it.

If the reader will recall, the range is made up of layers, lying on top of one another like piled-up saucers. Beginning on the mineral range the layers dip down beneath Lake Superior, hardly steeper than an ordinary flight of stairs. As geologists learned more and more of the Copper Country's underground character, it became possible to calculate the exact angle of this dip and so estimate just how far beneath the surface a certain layer would be at any given point.

Captain Daniell had bossed up and down the range, and while he would have been insulted had he been classed with those "damned geologists" his natural, Cornish sense of mining together with rule-of-thumb calculation enabled him to estimate the dip of a lode with the best. Captain John had worked for Calumet & Hecla and knew the angle at which the Calumet conglomerate lode was headed on its way beneath Superior.

At the time, the C. & H. mines were operating more like units of a manufacturing plant than like divisions of the highly uncertain business of mining. The red, conglomerate rock was so consistently rich, and the lode so dependable, that the company looked upon its mines simply as an indefinite source of raw material. It owned a good many acres of land, and according to all calculations the lode would not reach the boundaries until the workings were at least 3,500 vertical feet underground. Hardly a handful of mines in the entire world had reached such a depth. And if the company officials thought about the matter at all they probably felt their lode would exhaust itself by the time it reached such unheard-of depths.

But Captain Daniell believed the conglomerate would be as rich as ever, long after it had passed the C. & H. boundaries on its diagonal path downward. He hastened to Boston to sell his idea to J. W. Clarke and the Bigelow brothers who were among the original backers of Calumet & Hecla. The Bostonians felt that Captain John knew what he was talking about. Together with a

number of colleagues they formed the Tamarack Mining Company and put up a million and a half dollars to back it. The new company purchased twelve hundred acres adjoining the C. & H. property, and Daniell set three shifts of miners to sinking a vertical shaft. For more than three years the work went on, night and day, month in and month out. Every foot of shafting cost the Tamarack treasury $61, yet all this time not so much as a copper penny was produced. Nor did the stockholders expect a penny in return. Captain John and his backers were betting that the shaft would eventually strike the Calumet conglomerate lode on its saucer-shaped way underground.

When Daniell asked for money, he promised he would cut the conglomerate at 2,260 vertical feet. On June 20, 1885, the Tamarack shaft struck rich conglomerate rock at 2,270 feet—just ten feet deeper than Captain John had promised. From then on it was clear sailing for the company. The Tamarack soon became another copper factory, with huge stores of raw material there for the mining. The first dividends were paid three years later, and by the time the mine was sold the shareholders had received better than $12,000,000 in return for their original investment of a million and a half. Behind the story of the Tamarack was irony of a twofold variety. The mine, first of all, was promoted by Calumet & Hecla stockholders with money paid them in C. & H. dividends. And when C. & H. purchased the Tamarack, some years later, the company had to pay $3,600,000 for it. Had the board of directors been a little less complacent, they might have had the Tamarack for the cost of the land.

Nowadays, it is easy to laugh smugly at such a shortsighted policy. And, looking at a modern geological map, it is still easier to snicker at the sometimes inane and generally futile efforts of the copper hunters of the 1840's. But don't forget that geology was worked out the hard way on the south shore of Lake Superior. It's no wonder that early Keweenawans so often wandered up blind alleys, chose the wrong fork, or strayed off the main highway. There was no one to give directions, and the few natural signposts were written in a strange language.

CHAPTER VI

FAITH, HOPE, AND A PHARMACIST

THE FIRST REAL COPPER MINE in Michigan came in opportunely just when the rush to the Keweenaw was operating in reverse.

By the end of 1846, men who had fought for deck space on northbound schooners clamored just as earnestly for passage back to Detroit, Cleveland, or Buffalo. They were ragged, worn, and disheartened. They told dismal stories of unaccountable failure and hard luck. It was easy for listeners to picture the Copper Country as an El Dorado which died a-borning. Even the optimists who hesitated to believe the bitter rantings of returned prospectors were shocked and bewildered when the wealthy Lake Superior Mining Company admitted to failure.

This company should have been the Big Bonanza, the Golconda of all the Michigan copper range. Its shaft was put down on the richest of veins, and there was a great deal of money in the company treasury for development work. The moving spirit of the Lake Superior Company was David Henshaw, who had resigned as Secretary of the Navy in President Tyler's cabinet to promote this ambitious venture. Henshaw's permit-collecting activities brought the company forty square miles in what was then thought to be the richest mineralized area on the Keweenaw. So much acreage would stack up in any mining district; a company holding this much land on the tiny peninsula was seemingly playing poker with marked cards. Moreover, the Lake Superior Company, with its well filled treasury, was able to employ the best scientific and mining talent of the day.

Dr. C. T. Jackson, who knew as much as anyone about the then primitive science of geology and more than most about the Copper Country, was retained to select a location. The company was also able to hire Charlie Gratiot, the top mining engineer of the time. Colonel Gratiot (as he liked the miners to call him)

knew all there was to know about the lead and zinc diggings along the Mississippi. He thought he knew all about copper mining as well.

In good time, Dr. Jackson located what appeared to be an unusually promising vein of solid metal which outcropped on company property. Charlie Gratiot thereupon hired fifteen disillusioned prospectors as miners and began putting down a shaft. Dr. Jackson, it seemed certain, had chosen extremely well. There was copper underground, lots of it. Furthermore, a considerable amount of pure silver was found mixed with the copper-bearing rock. In midsummer, 1845, Colonel Gratiot sent his report to the Lake Superior shareholders:

> The whole known length of the vein is about 1800-feet. Its width is satisfactorily proved to be 11-feet for the distance of 200-feet and it is probable that it will hold a workable width throughout the 1800-feet. If the lode gives out at a considerable depth, say 300-feet, it will be of little importance to the present generation, though it might be to posterity.*

Unfortunately for the company, Dr. Jackson's careful calculations were based on inadequate geology of the 1840's. The Lake Superior shaft, like so many others of the time, had been sunk on one of the Copper Country's deceitful overflow deposits—a fissure vein—and it petered out less than a hundred feet underground. Not even Dr. Jackson realized the true situation, and the company continued working the property hopefully but hopelessly, until its stake of $105,833 was exhausted. This was a great deal of money in the early 1800's, and the Lake Superior Company's costly failure set the tongues of I-told-you-so's wagging in the metal markets of Boston, New York, and even London. Now that the doubters could point to Mr. Henshaw's enterprise as a horrible example, even the most diehard protagonists were inclined to agree that perhaps the southern rim of the Big Cold Lake was, indeed, merely copper-plated.

Fortunately for the history of the range, while Henshaw's com-

* Colonel Gratiot must have turned in his grave as miners working the sub-levels of the Red Jacket shaft—years later—reached 6,000 feet; more than a mile, straight down towards the center of the earth.

pany was engaged in its futile mining operations, a brisk little Pittsburgher was busy searching out the formula for Copper Country success. This, he would prove once for all, involved three vital factors. He would demonstrate that no one of them would do; nor would combinations of any two. Men who expected to cope with the vagaries of Keweenaw geology needed the Big Three: Land, Luck, and Money.

John Hays was a Pittsburgh pharmacist bedeviled by his own pills and prescriptions. He frankly detested "pill-doctoring" and spent as much time as he could in the woods with his hunting dog and muzzle loader. When the news of copper up north reached Pittsburgh, it awakened a twofold interest in the restless druggist. He saw a chance of making a fortune in copper, and his adventurous soul stirred with the thought of a new wilderness to explore. But even in those days, no businessman could lock the front door, hang out a sign, "Have Gone to the Keweenaw—Back Later," and with no further ado, set off to hunt copper. Like any modern businessman who yearns to get away from it all, Hays paid his personal physician a call.

Dr. C. G. Hussey listened with a sympathetic ear—the two were old friends and for years had hunted and fished together—and, after going through the motions of a physical examination, gave his diagnosis.

"John," he said, "you are in an extremely run-down condition. My advice is that you take an immediate trip to Lake Superior. Probably the region in which they've just discovered copper would be the most beneficial. I'll pay half of your expenses, and if you should happen—just happen, mind you—to see anything that looks good, why—"

That very afternoon John Hays left Pittsburgh with a haste unbecoming a sick man. In the succeeding weeks his impatience gave great annoyance to schooner captains who sailed him north and then west. He finally reached Copper Harbor, some time during July, 1843, among the first arrivals suffering from the copper fever. He made friends energetically and within a week was calling everyone in town by his first name. Prospectors, thirsty from searching the range, found him always willing to stand treat, provided they returned his hospitality by talking about their prospects.

One morning when he was holding court and buying drinks a sad-eyed stranger undertook to entertain the drinkers with an almost Shakespearean account of his special misfortune. Hays, listening idly, pricked up his ears when the stranger pounded on the bar and declaimed:

"I got three of the best god-damned claims on the Keweenaw —pure copper sticking right out of the greenstone on one of them —and I can't raise a cent to take the stuff out. What I need is a partner."

Hays reached for the bottle, poured the stranger another drink and began asking questions. The prospector was a Bostonian named Jim Raymond who held the rather useless distinction of being the first man to register a claim at the mineral agency at Copper Harbor. It seemed he *did* hold three claims, and before long the persuasive Hays had borrowed a pencil from the bartender and was scribbling an agreement on the back of an old letter. This paper gave Hays and his friend, Dr. Hussey, the option to purchase one-sixth interest in all three claims for the sum of $1,000.

Hays immediately set off for Pittsburgh to bring home the glad tidings. Dr. Hussey listened, fascinated, to his glowing description of the Keweenaw. The two soon worked themselves into a fever of enthusiasm and agreed at once that a mere one-sixth interest in three guaranteed bonanzas would never do. The eventual result was the formation of the Pittsburgh & Boston Mining Company. Boston was represented by Raymond and several friends who had grubstaked him, and they contributed the three claims for their shares in the corporation. Pittsburgh contributed the capital, through Hays, Dr. Hussey, and several others—notably another physician who later wagered his entire stack of chips on a single bet.

With the earliest whisper of spring, 1844, Hays again set off for the Keweenaw. With him were a geologist, nine husky Pennsylvania coal miners, and an amazing assortment of boxes, crates, and barrels containing supplies and mining equipment. Clearly, Hays, Hussey, *et al.*, meant business. But this was the second year of the copper boom, when the rush to the Copper Country was reaching its full momentum. Many other hopefuls stood on the docks at Cleveland waiting their turn for passage to the Sault.

The few schooners then plying Huron were far overtaxed by the unprecedented demands of passengers and freight. For a moment, though no more, Hays was stymied. Then, crowding past the others, John strode up to the master of the schooner *Swan*. "What'll you take to charter your boat?" he asked. It was a sellers' market, and Captain Ben Stannard's price was stiff. Nevertheless, when they heard about it, the Pittsburgh & Boston shareholders approved Hays' expensive impetuosity, as they did his subsequent charter of the *Algonquin* for the last leg of the journey to the Copper Country.

All through the spring and summer of 1844, Hays and his party searched the first of Raymond's claims. The land was located close to Copper Harbor and was probably chosen as the scene of initial exploration because Douglass Houghton had blasted out his provocative "forty pound boulder of solid copper" in this area. The party grubbed here and there all summer long with little or nothing to show for their efforts. Then, just as autumn was beginning to tint the maples, a soldier from near-by Fort Wilkins showed Hays specimens of ore he had found while repairing the stockade around the fort. The soldier was rewarded with $50 for his perspicacity. Hays and his geologist searched for and soon found the vein from which the ore had come. During early December, the first shaft in the Copper Country was put down.

Soon Copper Harbor was ringing with the news: "They've found a rich vein of black copper oxide* on the Pittsburgh & Boston location!"

It was a proud day for John Hays. He brought the triumphant news to Pittsburgh himself, together with a sackful of ore samples. Dr. Hussey and his fellow shareholders in P. & B. were jubilant and regaled all who would listen with accounts of wealth to come. The Boston shareholders had an even more concrete reason for rejoicing. A firm of assayers in the Hub found that the ore contained 86 per cent fine copper.

The dreams of the P. & B. shareholders, however, were still only dreams. The miners had sunk the shaft just fifteen feet when

* Black copper oxide, or melaconite, is one of the rare exceptions to the rule that Lake copper is found only in its pure, native state. Generally, oxides and carbonates have been found close to the surface—the result of a reaction between air, water, and the pure metal.

the vein pinched out entirely. Like the Lake Superior Company, Hays' forces were working nothing but a shallow pocket. Undaunted, Hays ordered his men to continue the shaft downward. The hammer and drill men toiled mightily, for the miners liked the little druggist and hated to see him fail. But by the time the shaft reached one hundred and twenty feet it was evident, beyond any doubt, that there was no more black copper oxide. Thirty to forty tons of ore had been taken from the first shaft put down on the Keweenaw Peninsula, and from the mineral the Roxbury Chemical Works near Boston smelted ingot worth $2,968.70. That sum was all Hays could show the shareholders for their investment of $25,000.

But the Pittsburgh & Boston's board of directors were still game. They voted unanimously to forget this initial failure and levied an assessment upon the stockholders. With fresh funds at his disposal, John Hays began explorations on the second of Jim Raymond's claims. This property was located about twenty-five miles down the Peninsula from the first diggings. In the course of his prospecting, Raymond had clambered up the greenstone bluffs common to this area, and at one point on the clifflike face he had seen outcroppings of native copper. As he had told Hays, somewhere within the heart of the bluff should be a rich ore body.

On the advice of geologists, Hays set his men to driving a tunnel or adit into the base of the bluff. The miners had worked inward only about seventy feet when they came upon a mass of solid native copper so large it took days of blasting to bring out the huge chunk so that the tunneling could continue. Back of the immense mass was more native metal in chunks of various sizes —so much copper that it was certain this was not another deceptive pocket. Now, for sure, Hays and the Pittsburgh & Boston had struck it rich!

But there was no time for rejoicing—the druggist and his men were too busy getting out metal. John did take time off to climb to the top of the bluff and christen his location the Cliff Mine. It's good to think of the wiry little pharmacist, silhouetted against the deep blue of a Lake Superior sky, freed forever from his mortar and pestle.

The discovery of the Cliff mass by systematic mining deep

beneath the hard rock bluff had a reviving effect on the Copper Country. Those who had said the Keweenaw was a mineralogical freak and the first copper finds were nothing more than hopelessly deceitful pockets had to eat their words. Men and money flowed north and west again. In fact the Cliff Mine, as much as the issuance of title to mining lands, was responsible for turning the Copper Country from a prospectors' camp into a genuine mining district.

Soon great copper masses were a daily occurrence at the Cliff. Many were so immense they required days of cutting before they could be divided into sections small enough to transport to the dock at Eagle River. An old-timer, still living, recalls the latter days of the mine and remembers the picture of the Eagle River dock, piled high with huge masses awaiting shipment.

"Most all of them," he'll tell you, "were bigger than my outhouse back there."

Three-quarters of all the metal taken from the Cliff came out in the form of masses weighing anywhere from a ton to a hundred tons. The rock surrounding the masses was so richly mineralized that a primitive method could be used to free the "barrel work." Vein rock and cordwood were piled on top of each other in layers until as much as sixty tons of rock were heaped up. The pyre was then lighted off. After it had burned for days, cold water was dashed over the blistering-hot mineral. The rock was shattered, and the metal could then be freed in a rude stamp mill.

All this was easy and profitable, but it didn't last forever. A time came when the Cliff's adit met only barren rock. The geologists believed that the main ore body was yet to be found. That, they thought, lay somewhere farther underground, and advised Hays to sink a vertical shaft from the top of the bluff. Hays agreed, for it was certain that underground exploration couldn't continue until the mine was equipped with a practicable hoisting system. The job of sinking this shaft was directed by Edwin J. Hulbert, who later was to find the greatest bonanza of the Copper Country—the great Calumet conglomerate bed.

The Cliff stockholders soon learned how expensive hard-rock shafting can be, and what heavy demands it could make on the company treasury. In fact, by the time the shaft had reached

seven hundred feet working funds were entirely exhausted. This in spite of early successes. The Company's operations had already involved a stock investment of $150,000 as well as assessments levied on shareholders of an additional $110,000. Yet there was no more copper in sight.

By this time, Pittsburgh & Boston had divided itself into two factions. The Pennsylvania contingent called a meeting in Pittsburgh, only formally inviting the Bostonians to attend. A most discouraging report was given to the assembly. Nevertheless, the ever optimistic Pennsylvanians voted for another assessment to pay for continuing the shaft downward. The Boston shareholders, who came anyway, had had enough of copper mining and voted unanimously, "Not another penny."

At this point, Dr. Charles Avery arose and asked the assembled directors, "What about copper mining in Europe—how deep do they sink shafts over there—does anyone know?"

No one did know, but all realized that the answer was important. Captain Edward Jennings, superintendent of the Cliff, who had come to Pittsburgh for instructions was summoned before the meeting and then plied with questions. Jennings, a Cousin Jack who had left Cornwall with several generations of copper mining experience behind him, spoke right up.

"No, sir," said he. "Seven hundred feet is no fair test for a shaft. Why, in Cornwall we hardly ever find any copper above eight hundred feet. Of course the gentlemen's money is not my money, but—"

This was enough for Dr. Avery, who held one-sixth of the Pittsburgh & Boston stock. "I'll lend the company $60,000. Let's sink that shaft a few hundred feet more."

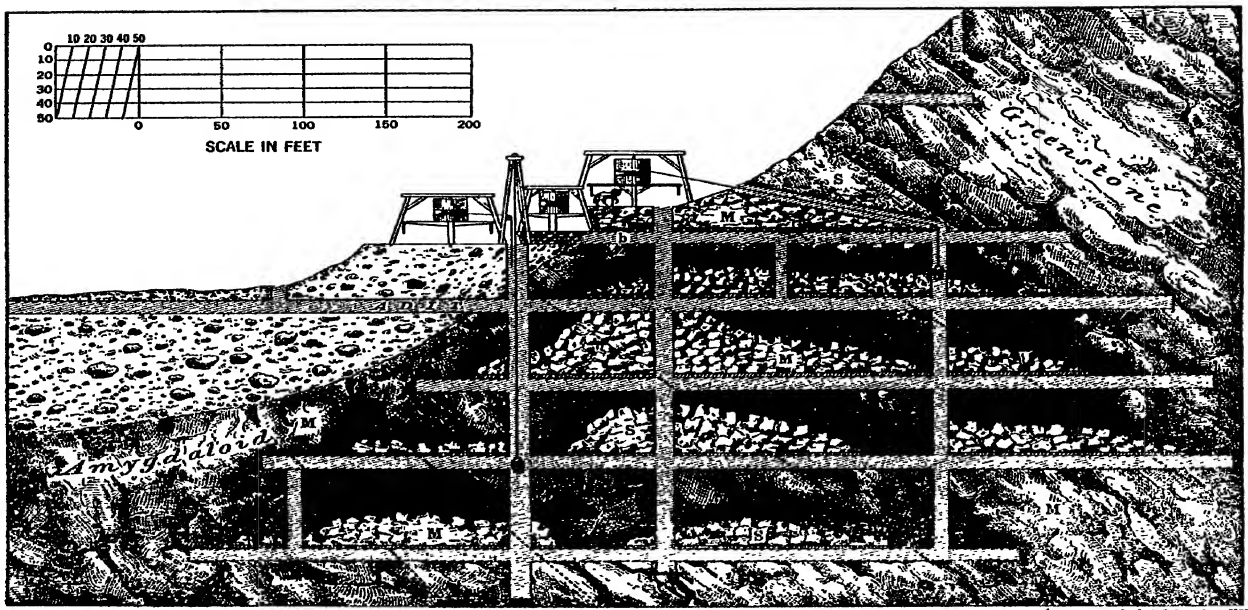
The Doctor wagered the savings of a lifetime, but fortunately the gamble turned out to be a lucky one. Eighteen months later the Cliff forces struck rich vein rock again. Shortly afterward, the company repaid Dr. Avery in full and was able to declare the handsome dividend of another $60,000 as well. This was paid to shareholders in 1849—the first dividend ever paid in the Copper Country.

Unfortunately, during that crucial year and a half, many of the stockholders had lost hope and either forfeited their stock or sold

it below the subscription price of $25 per share. They soon regretted their lack of faith. The Cliff began clearing $20,000 net profit every thirty days and the Boston Stock Exchange was quoting Pittsburgh & Boston at $300 per share. During one happy period every pound of copper stoped out of the Cliff's in'ards put six and one-half cents into shareholders' pockets. Nowhere in the world had so much copper ever been taken from so small an area of mineral land.

Now that he was wealthy, John Hays' early subterfuge caught up with him, so to speak. He became genuinely ill from overwork, and Dr. Hussey was then completely serious when he advised Hays to travel for his health. John and his wife toured Europe; but all the while he couldn't forget his beloved Cliff. American smelters were having trouble with the hundred-ton masses, and Hays conceived a special furnace able to handle these awkward lumps with ease. He journeyed to Swansea, Wales —then the greatest smelting center in the world—expecting to study the Welsh methods before completing his own ideas. Hays had assorted specimens ranging in size from a few pounds to a show piece of a ton and a half shipped to Swansea. These astounded British scientists but apparently produced only jealousy among the Welsh smelting magnates. They carefully avoided giving him any cooperation. Not in the least nonplused, Hays returned to Pittsburgh and built the sort of furnace he had had in mind in the first place. Its entire top could be lifted off, so that the huge masses of Lake copper could easily be lowered inside. The furnace proved a great success, doubtless to the chagrin of the Swansea magnates.

Pittsburgh & Boston, satisfied with a return of over 200 per cent in dividends on paid-up capital, sold the property in 1871 as the lower levels grew meager. A Cliff Mining Company was formed, the old levels were unwatered, and the property buzzed with activity again. Nearly 6,000,000 more pounds of copper were produced before this second chapter of the mine was concluded nine years later. Then the Tamarack Mining Company, flush with profits from its shafts on the Calumet conglomerate, tried its corporate hand at working the Cliff location. It, however, was unsuccessful and was the last to mine the property. As this is



SECTION OF THE CLIFF MINE

Mass copper piled in stopes ready for hoisting in 1849—the year the Cliff paid the first dividend in the Copper Country. The product taken from areas between dotted lines designated by "M" was chunks of mass or solid copper. "S" designates rich, but less fabulous "stamp-work." "b" marks spot where first mass was found—a discovery which disproved early geologists who insisted the Keweenaw was merely copper-plated. Note Cornish-style hoisting apparatus known as a "horse-whim." The apparent inconsistency between illustration and text is due to the single-minded artist, who "intent on representing underground workings ignored surface scenery."

being written, diamond drill crews are making test borings in the vicinity of the original shafts. Geologists examine the drill cores with patient care hoping to find indications of extensions or continuations of the Cliff fissure vein.

For the most part, however, the Cliff is a ruin, its shafts filled with water and its once populous village a disheveled, crumbling ghost town—important only as a tourist attraction. A few tottering buildings and a weed-grown cemetery are the only remaining monuments to *forty million pounds of copper.* Today, few remember the Cliff was the first mine in the district to prove that fortunes could be made in Michigan copper. Provided, of course, your efforts were backed by the proper combination of Land, Luck, and Money.

Dr. Hussey used his profits to become something of a mining and manufacturing tycoon. He was instrumental in forming the Mass Mining Company as well as many others along the copper range, but his mining ventures were successful only in wasting a good deal of money. The C. G. Hussey Company of Pittsburgh, however, carried on a highly successful brass and copper fabricating business for the best part of a century. Just recently it was merged with the Copper Range Company, and thus Dr. Hussey's descendants still benefit indirectly from the Cliff Mine.

CHAPTER VII

NO SABBATHS WEST OF THE SAULT

THE WINTER OF 1848–1849 was the meanest the Copper Country had seen. The thermometer went to 38° below zero, and thirty-seven feet of snow fell in four months. Even so, it was remembered simply as the winter before the gold rush, when hundreds left the Superior region to seek their fortunes in California.

"The Keweenaw's gettin' to be nothing but a goddam outdoor factory," men told one another. "Things can't be any tougher out West, and a man's got a chance of making more'n forty a month wages."

The Copper Country by this time resembled, at least, a real mining district. Now that the permit system was abolished and titles to mineral lands were purchasable, systematic and business-like mining enterprise had come to the range. Moreover, by the end of 1849, the nation began to take the distant boom camp seriously—and with good reason. That year the Siskowit Mine produced some 32,000 pounds of red metal, the Copper Falls 22,400 pounds and wondrous Cliff 1,282,131 pounds. All in all, the Copper Country produced better than a million and a half pounds of the red metal in 1849—at least 85 per cent of all the copper got out in the United States. Now the whalers and clipper ships building on eastern ways could have their bottoms sheathed with American copper. Some visionaries even predicted the day would come when U.S. shipbuilders wouldn't need to import so much as a pound of the metal.

While this made the entire United States mighty, mighty proud of American enterprise, these first evidences of success didn't make life any easier for the boys who were getting out the copper in the Keweenaw. Life for them was still far from being a bed of roses.

Developing a mine at the time was a matter of several years.

Until a location could be proved up, the mining companies naturally made as few surface improvements as possible. The miners lived in the roughest of log bunkhouses and slept in three-high tiers of pine-plank bunks. If, as was common, the location happened to be in swampy land, the bunkhouse was simply built high, and the miners sloshed to and from work. In winter there were months of below-zero weather. And the work itself was no job for a weakling. The men drilled the rock by hand, hoisted it by "armstrong," or hand-operated hoists. The entire mining plant was operated by main strength.

But it was food and the lack of it which made things really tough in the early days. From mid-November until as late as the middle of May, navigation ceased entirely on Lake Superior. A supply of food for seven long months of winter had to be shipped in by fall, and sometimes it didn't arrive. Occasionally in extreme emergency a sleigh-load of salt pork was brought in overland, but it was more than two hundred miles to railhead at Green Bay and during most winters the miners were lucky if a few sacks of mail got through by dog sled.

All supplies had to come by water from Detroit. They were transshipped at the Sault Portage and then finally dumped on the shore as near as possible to a location. Freight charges were a dollar a barrel, and it cost another half-dollar to get supplies to the mines. This last stage of the journey was often enough on miners' backs, for there were no roads and Kentucky jacks or mules cost $200 by the time they reached the Keweenaw.

Salt pork and flour, the eternal sustenance of early mining camps, came in barrels weighing one hundred and fifty pounds. Lugging a burden of this size through underbrush and over rough terrain is a task old-timers remember above all others. They tell of a French-Canadian, known only as "Old Edward," who had fought with the American Army in 1812. He was famous throughout the Copper Country for his feats of strength and endurance with pork and flour barrels. At the age of ninety, they say, he used to pick up pocket money making bets on the number of times he could run up and down the hill at Eagle River with one hundred and fifty pounds of pork balanced jauntily on his shoulder.

Fresh meat came in on the last boats of the season. The *Inde-*

pendence and the *Julia Palmer* steamed into Eagle Harbor with frozen quarters of beef, carcasses of sheep or hogs hanging from the rigging like naked bodies dangling from some pirate ship's yardarm. If there happened to be space, a deckload of live cattle was sometimes carried on the last trip of the season. If these were consigned to Ontonagon, Eagle River, or other boom towns where there was neither dock nor harbor, the cattle were simply shoved overboard and recaptured once they swam ashore through the icy water.

One fall a visionary settler had a deckload of wild Texas longhorn steers shipped in. His plan was to kill them off one by one and provide the luxury of fresh-cut steaks at exorbitant prices long after the rest of the fresh meat in the Copper Country was exhausted.

The longhorns were pushed overboard, and the entire herd reached shore safely. But the unhappy meat merchant had recruited his herders from the mines, and Keweenaw copper miners were a far cry from Texas cattlemen. When they saw the wild cattle stampede in all directions, the sharp long horns glistening with lake water, the green cow hands fled in terror. The longhorns, to a head, escaped into the woods. The would-be fresh meat monopolist was beside himself as he saw his sizable investment disappear. Even though his Texas steers were unable to get far into the woods (the heavy underbrush tangled with their long horns), they were much too wild to round up.

Finally, in desperation, a hunting party was organized. The idea was to shoot enough cattle to meet the immediate demand; later, more would be shot as miners again hungered for fresh beef. But the hunting party was overenthusiastic and in a short time had killed off nearly the entire herd. The hopeful provisioner stopped the slaughter only by turning his rifle on his fellow Nimrods and threatening to add them to the pile of carcasses if they didn't curb their enthusiasm. That winter the price of frozen beef reached an all-time low.

The usual practice was to hang a carcass of frozen meat from a tree near the camp cookhouse. The cook would then hack off as much as he needed with an ax. As this frozen meat was cooked up only on Sundays or special occasions, it was kept a long time

and towards the end acquired quite a gamy flavor, especially if there happened to be a rare, early winter thaw. When these carcasses were gone there was no more fresh meat until spring, unless, as one mining captain wrote, "an oxen died of overwork."

Directors of the mining companies living amid the comforts of eastern cities seemed to expect the miners to live off Nature, for the food item in annual reports was usually the most niggardly of all expenditures.

A petulent director of the Phoenix mine, well fed and warm in his comfortable Boston office, wrote a letter criticizing the superintendent for the amount of rock taken out during the winter.

"Why, damme," fumed the mining captain, "of course we didn't get out much rock! The men were out hunting food most of the time."

City-bred mining officials formed their ideas of the Copper Country's fish and game resources from brief inspection trips made during the summer months. Towards August, when the mosquitoes and black flies were less troublesome, the hunting was excellent and the fishing incredible. Remembering their summer's luck, the officials saw no reason why the miners shouldn't hunt or catch their food the year round; but at 20° or 30° below, even Izaak Walton would have preferred salt pork.

No less a personage than John Muir, later known as the father of forestry and our national park system, blandly suggested to the directors of the Forrest Shephard Mine in the Ontonagon district, that the "miners catch as many fish in Lake Agogebic as will do for winter's provisions."

Muir later had a glacier in Alaska named for him and traveled extensively in the Arctic. Presumably his suggestion was made before he went north and had a taste of a winter-long diet of fish himself.

John Forster, a prominent mining engineer of his time, was marooned one winter at the Northwestern Mine during its development period, and together with several other unfortunates established a high point in dietary monotony. That year winter arrived unusually early; several supply vessels were unable to make their last voyages, and the Copper Country was left with

bare subsistence rations. There were six mouths to feed at the Northwestern—three miners, Forster, and a French-Canadian and his wife who did the cooking. The mine larder consisted of a single cask of pork, a keg of salt, part of a barrel of flour, and a superabundance of potatoes and salt whitefish.

Madame Chambreaux was either a puckish sort of humorist or else one of the most dogmatic doctrinaires on record. When the bottom of the pork barrel showed through, she simply declared that Lent would begin the following morning. It was early December, and Ash Wednesday was still many weeks away. Nevertheless, those at the Northwestern began observing a meatless period which finally exceeded the orthodox forty days by months. Doubtless no known method of preparing fish exists which wasn't tried out during that winter. The whitefish was dished up as chowder, soup, and stew; it was boiled, broiled, and fried; prepared in cakes, balls and, for variety, served with and without potatoes. Despite the appalling familiarity of the basic ingredient, Madame Chambreaux succeeded in awakening a certain amount of enthusiasm for her succulent whitefish pie.

Forster claimed that men traveled as far as fifty miles on snowshoes just to taste this pie. Their interest, however, was induced more through sheer curiosity than epicureanism. Since the entire range lived on whitefish that winter, these pilgrims made the journey solely to see how whitefish could possibly be prepared in an original manner.

Other winters the food shortage wasn't even this easy to take. The first winter, of 1843–1844, the *John Jacob Astor* sank in Copper Harbor with the entire winter's food supply for both Fort Wilkins and the Pittsburgh & Boston mining forces aboard. Fortunately, she went down in shallow water, so they were able to take off a good part of the cargo. But it was still a narrow margin between starvation and the first boat through in 1844.

Another winter, fire nearly did in the people of Eagle Harbor. Judge William P. Raley, whose son runs the Lake Breeze Hotel at the Harbor today, had filled his warehouse to the roof with provisions and supplies for the winter. His was the only warehouse in town, standing out on a long pier where the little steamers tied up to land supplies or take off copper from the near-by Copper Falls,

Arnold, and other mines. One day, a warehouseman, shifting boxes and barrels, upset a carboy of acid ordered for one of the mining companies. The acid burnt through the plank floor, reached the water beneath and in a few minutes the warehouse was in flames.

The citizens of Eagle Harbor came running, and the surface men at the mines followed. They made an attempt to save some of the provisions, but Judge Raley warned them off. "There's two hundred kegs of black powder in there," he said.

Everyone watched with horror as the flames reached the powder and the winter provisions were blown into the air and dropped back into the Harbor. It was a frightening sight, for all knew none of the mining camps had enough surplus food for so many people.

Judge Raley and a few of the doughtier citizens agreed there was only one thing to do. They set out early the next morning in an open boat for Sault Ste. Marie. This alone was a heroic voyage, but it was outdone on the return trip. At the Sault, much against the owners' will, they chartered the propeller *Planet* and loaded her down with supplies. It was now deep in December, and Superior was angry night and day. The little *Planet* was none too stanch for ordinary summer storms. Now she barely held together. For three days the brave party was blown about the lake without the slightest idea of their bearings. But Superior was unaccountably kind and blew the *Planet* westward. When the storm had calmed, the party found they could make Eagle Harbor. The citizens of the Harbor cheered Judge Raley long and loud and held a dinner for him and his fellow heroes that very night. Eagle Harbor and the mines were safe for another winter.

A little before this, Superior's furies nearly claimed the life of the famous journalist, Horace Greeley.

It would have been fortunate for a good many people if Greeley had let young men "Go West" as he advised in his renowned truism and stayed in the East himself. As a mining man he was undoubtedly a good newspaper editor. From the Keweenaw he bumbled around Colorado and made a wild-eyed trip to the Washoe, later writing naïve accounts of all three. His stories brought on at least one unfortunate rush of amateur prospectors; but that is, of course, another story. His presence in the Copper

Country gives some idea of Greeley's highly scientific approach to mining.

According to his own account, a total stranger named Bailey wrote asking Greeley to serve as a director in a projected copper mine in the Keweenaw and offered a block of stock as an inducement. He not only accepted but traveled all the way to Eagle River and spent considerable time running the affairs of the Pennsylvania Mining Company during 1847 and 1848. All he accomplished in the course of two years was "coaxing several assessments from unwilling stockholders." His single success in the Copper Country had little to do with mining. During his spare time he solicited subscriptions to his *New York Tribune* from mining officials' wives.

In his misguided enthusiasm for the Copper Country, Greeley waited until the last boat of one season before he embarked for home. There was no dock at Eagle River and he put out in an open boat to board ship. A heavy sea was running, and the little craft was tossed like a toy in the waves. The great Greeley was pulled aboard just before Superior dashed his boat to pieces. More than one passenger was drowned in this manner before he could be rescued from the icy water. Greeley, however, was saved to meddle in mining elsewhere.

Some winters, boom-town saloons ran out of forty-rod long before spring. That, the boys said, was really serious and not to be compared to a mere shortage of food.

Old-timers like to claim the term "forty-rod" originated in the Keweenaw. This is unlikely, but it was an apt name for the walloping grade of drinking liquor dealt across the rough bars of the day. According to the story, the term originated because this type of whisky would down a tenderfoot standing forty rods from an open bunghole. Even old-timers, it is said, would set fire to their own mothers after downing a shot or two.

Even though the holds of the early vessels were loaded with barrels of forty-rod (they often occupied space where provisions should have been stowed) the supply was usually exhausted long before the first spring boat was due. Boom-town saloonkeepers were avaricious men and should have gauged the demand more accurately. But the vast thirst a man could build up in the course

of a seven-months winter was incalculable. Consequently, the simple process of dilution was resorted to. As the last barrel of forty-rod was broached the bartenders began adding water. At the end of each day's business the barrel was filled to the brim again. Along towards the first of April all the forty-rod on Lake Superior wouldn't down a tenderfoot at any range. Old-timers wouldn't touch it.

One winter a serious drought of this sort caused what may have been the first bootlegging in the country's history—certainly the first in the Copper Country.

During the winter of 1844, eight men smuggled two hundred and fifty gallons of forty-rod out of Green Bay without bothering to pay the tax. So large a shipment could hardly escape notice in so small an outpost. As the men and their dog teams mushed northward a runner was sent out, and word of their illicit cargo reached Fort Wilkins before they did. Captain Cleary was on the lookout, and when they finally arrived he confiscated all two hundred and fifty gallons. None of it reached the thirsty soldiers for whom it was originally intended.

Fort Wilkins was built early in 1844 to protect prospectors from the Indians, although in practice the protection worked the other way around. A stockade of pointed logs surrounded the buildings in best frontier style, and until the Mexican War the fort had a garrison of several hundred. It was practically abandoned during the war, in the course of which the men distinguished themselves considerably and one of their officers had his head blown off in front of Vera Cruz. It was regarrisoned about the time of the Civil War for fear the British might come down from Canada and take over the copper mines while our back was turned. The fort was finally abandoned for good in 1870. Just recently it was reconditioned for the edification of tourists, and now small boys amuse themselves by cutting their initials in the old stockade.

Law and order came to the Copper Country because of the super exuberance of miners on Sunday.

The boys mined and labored six days of the week and did their heavy drinking and fighting on Sunday. The saloons, bawdyhouses and dance halls prepared all week for the Sabbath. The "groceries," a Copper Country euphemism for establishments with a

small stock of eatables in front and a much larger stock of potables in the rear, gave a special fillip to the Sabbath by hoisting house flags early Sunday morning. Each grocery had its own distinctive gonfalon or banner, complete with insignia or coat of arms. The design usually had to do with drinking, such as a bulbous whisky barrel rampant on a field of glassware. Others had foaming beer mugs, and Jim Paul's Deadfall flew the device of a hard-cider keg. A visiting Englishman said Eagle River on a Sunday reminded him of the Royal Navy in full review, the flagship represented by the largest flag of all, flying above the Phoenix House.

Along towards evening the fighting began! As a rule each nationality had its favorite or official drinking place. No good Irishman, for example, would think of entering a Cornish saloon. For that matter he wouldn't have dared. The two extractions were bitter enemies during the early days. Often enough gangs of Cousin Jacks properly loaded with forty-rod would go forth to do battle with a picked crew of Irishmen, and a first-rate riot resulted. Private fights were the rule, however, settled on the spot within the barroom, the best man buying.

Life is seldom valued very highly in a mining district, accidents and disasters being as common as they are. Yet a man's life never went quite so cheaply in the Copper Country as it did in the West. Gun fighting, by tacit agreement, was barred in the Keweenaw. But a chair, a bottle, or a length of stovewood is a lethal enough weapon. Many a miner, they say, was carried over the Keweenaw version of Boot Hill after succumbing to skull fracture or general debility following a Sunday barroom brawl.

In the forties, a leading Detroit newspaper sent its star reporter to Superior to write up life in the copper mines. He duly reported regular mining activities and described the wondrously rich deposits in fine style. But the events he witnessed on the hard-sinning Sundays could hardly be reported in a family newspaper. The best he could do was to sum them up in a phrase coined on the spot:

"There's no such day as the Sabbath, West of Sault Ste. Marie."

Sunday brawling soon got out of hand. As the mines grew prosperous, more and more men piled off the boats and were signed

on the company pay rolls. The more men—the more violent the Sundays. A jail simply had to be built to hold the more boisterous Sunday celebrants. In 1846, the town of Eagle River voted $100 for that purpose, and a heavy plank bastille was constructed in the attic of the German Hotel.

The building is still standing, though it is now a private house; and if the owners feel kindly towards a visitor this cell may still be seen. One has only to look at it to imagine that about ten minutes' confinement in so small and stuffy an inclosure would induce the worst toper to sign the pledge.

The records, say, however, that as many as thirty men were thrown into this attic penitentiary after an especially lively Sunday. Furthermore, for a time, it was the only jail on the Keweenaw. Local vigilantes in the Portage Lake district were forced to bind transgressors hand and foot and haul them by wagon forty-five miles over execrable roads to the Eagle River jail.

Old-timers still recall an incorrigibly alcoholic miner known as Jemmie Tresize, a mighty Cousin Jack. Law-and-order officials were, in those days, also mining officials and thus were faced with a difficult decision in dealing with Jemmie. They were torn between dispensing justice and getting rock out of their shafts. For Jemmie could load a kibble faster than any ten men working together.

All week long he labored prodigiously and on Sunday downed ever more prodigious quantities of forty-rod. No one questioned his right to get roaring-drunk once a week, nor even his preliminary fighting. But Jemmie, along toward Sunday evening, began taking on groups of four and five men. The casualties were terrific. On Monday morning, mining officials might find half their underground forces absent, fallen under Jemmie's rock-hard fists. Consequently, there was a standing order in Eagle River, to lock Jemmie up as soon as he showed signs of approaching the mass mayhem stage.

The jail was small as noted, and Jemmie measured six feet vertically and nearly that much across the shoulders with the rest of him in proportion.

On an extra-riotous Sunday the sheriff had a hard time getting so much gross tonnage inside an already crowded cell. A special meeting of the town councilmen was called, and one of them made

a suggestion. The next day they sent to Detroit for a ball of solid iron, weighing, it is said, two hundred pounds.

On the Sunday following its arrival, when Jemmie was approaching the violent stage the sheriff shackled the ball to his ankle with a piece of chain and then turned him loose in the yard alongside the German Hotel. All went well until a few Sundays later. The justice of the peace was going home for dinner after a hard afternoon presiding over the regular Sunday special court. He had personally seen Jemmie gathered in by the sheriff and had stood by as the shackle was fitted. Down the street he went, confident that Jemmie at least, was out of circulation. En route, he passed a favorite Cousin Jack hangout. His eyes all but popped at what he saw through the window.

There, inside, stood Jemmie, belly up to the bar, singing and shouting defiance to every Irishman in the Copper Country. In one hand he held a glass of forty-rod, in the other he hefted the two-hundred-pound solid iron ball!

At the other end of the Copper Country, drinking was popular not only on Sunday but often all the way through to the following Sabbath. Ontonagon Village, strictly speaking, was a port rather than a mining location. The big mines like the Minesota, National, and Victoria were upwards of ten miles from town. Thirsty miners tramping this distance deferred the long journey back to the mines as long as possible, often until their money and credit ran out. Ontonagon had a floating population in all stages of drunkenness and convalescence every day of the week.

Jim Paul's Deadfall thrived on these fugitive miners, and excitement reigned the week around. When the customers weren't fighting among themselves, Jim was usually throwing out a half-breed. In between, there were practical jokes.

There was the time the pixies among Jim's customers set a steel bear trap in a dark corner behind the bar. And then there was the priceless prank they played on Bill Schlatter which kept the bar flies in stitches for many a month. Bill had been an educated man and a fine surveyor before forty-rod laid him low. Now he hung around the Deadfall cadging drinks and acting as the butt of jokes. He would drink anything that at all resembled liquor, downing it hastily lest his benefactor change his mind.

One day they mixed a powerful cathartic into a glass of forty-

rod and offered the concoction to Bill. He downed it quickly, and two more as well. The boys could hardly contain themselves as they waited for Nature to react. Schlatter shortly staggered out of the doorway into the zero weather outside. He was gone quite a time—in fact, so long that everyone forgot him and turned to laugh at some new gem of humor. They didn't find Bill until next morning, lying in the snow, frozen stiff in a most uncorpselike attitude.

The Ontonagon town fathers built a jail which was even less attractive than the one at Eagle River. It was merely a hole in the ground, roofed over with heavy planks. A trapdoor was cut in the middle and wrongdoers were dropped inside. This dungeon, it is said, was so frightening to a man wakening from a drunken sleep that few who were incarcerated ever forgot it. Those who had gone through this experience oftentimes bought a jug of whisky before they got too drunk and continued their bout on the way home rather than risk another experience in Ontonagon's catacombs.

Many of the boom-town saloonkeepers when not engaged in dispensing forty-rod spent their time chopping and sawing the near-by pine into boarding houses and hotels.

Up at Copper Harbor, Dad Brockway set up his Brockway House. Dad was as hardy a pioneer as they came and at the age of sixty-five, tiring of hotel keeping, went off prospecting for gold in the Black Hills and nearly perished in a blizzard. Today, there is a mountain in the Copper Country named for him. Old-timers still call the mountain Dad's Nose because of a fancied resemblance to Brockway's profile. At any rate, the view from the top is unsurpassed, and Brockway Mountain is a fit monument to Dad's early hospitality.

When Bill Childs could spare time from running a couple of early copper mines, he was host at the Astor House, near Copper Harbor. Eagle Harbor and Eagle River boasted pine-plank hotels although they burned down so regularly few had time to acquire much fame. The single approach to greatness was the twenty-four room Phoenix Hotel at Eagle River. This caravansary modestly announced itself as the "finest hotel north of Detroit."

Of all the early stopping places of promoters, capitalists,

Pawnees, prospectors, and miners, the Astor House * seems to hold the fondest place in memory. Some said the name was inspired by Childs' earlier days in the East and a visit to the magnificent hotel of that name in New York. There was a standing joke among the boys who sat around the stove of the Keweenaw Astor:

"The New York Astor is a lot of granite above ground, but our Astor here has a damn sight more below it."

Actually the Astor was named for the little brig *John Jacob Astor* of the American Fur Company, which had torn out her bottom when a sudden storm struck her as she lay at anchor in the Harbor. Childs had used some of the timbers and planking from the wreck to build his inn. This, he felt, put him under obligations.

The Copper Country Astor was a pine-log cabin, a story and a half high. Tacked onto the back was a lean-to, containing a kitchen, dining room, and lobby. A French-Canadian, recalled only as François, presided over this annex. When not occupied as chef or waiter, he did duty as porter, chambermaid, bellboy, and desk clerk. Upstairs in the half-story were the sleeping quarters, consisting of a single, low-ceilinged room. Guests took up a mat and a buffalo robe from a pile in one corner and threw them down as a bed wherever there was space.

This at once became the guest's "location." No matter how long he might be away, the space was inviolably his. Under the miners' code, all his possessions, even his valuables, left here, would be untouched by fellow lodgers. However, men traveled light in the Copper Country and wore most of their clothes on their backs.

Miners' clothing varied, but there were two items no man could do without. These were a supply of "nips" and three red flannel shirts. Nips, a Keweenaw miner's substitute for socks, were squares of flannel which were folded diaper-fashion and the ends wrapped around bare feet. They were warm and, spread out, dried quickly.

As for the shirts—the Superior region has always been known as a three-shirt country. In the early days temperature was never

* The first Copper Country newspaper, the *Lake Superior News and Mining Journal,* edited by John H. Ingersoll, was published in the Astor House in 1846.

gauged by degrees or with thermometers. October on Lake Superior was simply a one-shirt season, November a two-shirt time; December to March was a frigid period when only three flannel shirts, one worn on top of another, could keep a man warm.

CHAPTER VIII

JIM PAUL'S BOULDER

WHILE JOHN HAYS was busy perfecting a smelting furnace capable of handling the copper masses from the Cliff Mine, scientists and mining men came from nearly everywhere to see the wondrous formations for themselves. When they returned home and assured colleagues that the immense chunks of metal were as advertised, the Michigan copper deposits became the marvel of metallurgists the world over.

So far as the public was concerned, however, Michigan's copper wonders were personified by a two-ton chunk of free copper known in the legends of the Copper Country as Jim Paul's Boulder. This freak mass, half buried on the muddy bank of the Ontonagon River, had been one of the known phenomena of the Superior country for at least a hundred and fifty years. The French hacked off souvenir pieces for King Louis XIV in 1665; the English tried to carry the boulder away in 1772. And in the early 1800's the American explorers General Lewis Cass and Henry Schoolcraft brought the copper rock to the attention of the United States Congress.

The Cass and Schoolcraft reports were grist in the mill of early Sunday supplement writers. Fanciful adjectives dripped from pens that described the big boulder as "a supreme gesture of Nature"—"a veritable nugget from the Gods"—"a pure, unalloyed, copper immensity." By 1840, the boulder had become a national curiosity. There were many schemes to raise and transport it to market. But only two men acted on their plans—Jim Paul, a long-haired frontiersman, and Julius Eldred, a Detroit hardware merchant with imagination.

Jim Paul was a hard-bitten, two-fisted hombre weathered by years of scratching a living from frontier enterprise. As a boy, Jim rebelled at the humdrum life on his father's Virginia farm

and headed west with a nomadic uncle. The two parted at St. Louis, and Jim spent his twenties doing heavy work on the Mississippi and Missouri River boats. He was once a mule skinner at Bloomington, Illinois, and the archives of the city of Chicago count him as one of its earliest citizens. Army records state Jim did a hitch of soldiering during the Black Hawk War along with an obscure captain named A. Lincoln.

After this last adventure, Jim thought he would try his hand at mining and wandered to the lead and zinc diggings in southern Wisconsin. Here he met another miner named Nick Miniclergue, a half-breed with a little book learning and a fluent knowledge of Indian dialects. News of the Ontonagon Boulder had filtered into the lead country, and Nick undoubtedly enlarged upon this legend as he told it to the newcomer. At any rate, Jim and Nick soon formed a two-man expedition to go and claim it. Jim, with more than enough nerve and fool bravery for both, would lead, while Nick with his knowledge of the Chippewa language was to handle the negotiations.

The two set out with a wagon and mule team, leaving Platteville, Wisconsin, toward the end of the summer of 1842. They traveled as far as Jenny Bull Falls on the Wisconsin River, where the road ended in wilderness. There, they traded their rig for two birch-bark canoes in which they traveled the rest of the way by water. They entered Lake Superior from the mouth of the Montreal River and then coasted the shore until they reached the mouth of the Ontonagon.

Here, on the east bank, the two built a log headquarters and base of operations. This made them not only the first white settlers in the district but founders of the village of Ontonagon.

On the opposite shore at the river mouth was a sizable village of Chippewa. It was a sort of county seat of the Ontonagon branch of that tribe, and the influential chiefs and aboriginal politicians held court there, settling arguments over trapping, hunting, and fishing. Obviously this was the place for Jim and Nick to learn the exact location of the Big Boulder.

Jim had picked the site of his log shelter as close to the Indians as possible, and as soon as it was completed he got down to business. He crossed the river and, with Nick at his heels as

interpreter, swaggered into the wigwam of the principal chief. Nick, gesticulating wildly, translated Jim's brusque words into presumably more polite terms, but Chief Plover was unimpressed. White men were no longer a novelty to the Chippewa, and Jim and Nick were hardly prepossessing specimens. Neither was handsome at best, and now, bearded and unshaven, they looked far more savage than the savages themselves. Furthermore, they had neither the governmental nor the ecclesiastical standing of most previous visiting white men.

Chief Plover pointed out calmly that Schoolcraft and Cass paid the nominal admission fee of quantities of tobacco and possibly a little whisky for the privilege of seeing the Big Boulder. But Jim and Nick were dead broke. Even had they been in funds, Jim would have scorned such indirect bribery. He believed Indians inhabited the wilds simply as a convenience for white men—much as city motorists believe farmers exist only to give directions.

Though Jim allowed Nick to continue the palaver with the Chippewa, he listened unimpressed as Chief Plover warned of the dire perils awaiting any man who had the temerity to visit the Big Boulder without a guide.

As a matter of fact, the Chippewa still believed the Boulder was the earthly connection of the Manitou. Sometimes they worshiped at the rock as at a shrine. Often the Manitou grew angry during these rites and spoke in a voice of thunder. Certainly they were not going to risk the Great Spirit's anger unless their fears were dulled with wampum.

In a letter to the King of France, Father Charlevoix had written that captives of war were often sacrificed upon the Big Boulder. On one occasion a fifteen-year-old maiden of the Ontonagons' own tribe was offered up to appease the Manitou. The Chippewa tied the shrinking girl to the rock, built and lighted a fire all about her body. As the flames danced about her naked form, the chief fired an arrow into her heart. Then the young braves, duty-bound to scorn the heat, came forward and dipped their arrowheads in her blood and so became invincible.

Nick had just enough Indian blood to respect Chief Plover's warnings and tried to persuade Jim to settle with the Chippewa

first, for fear they would never come back from their quest. Jim hooted in derision.

"Why, you lily-livered, sneaking half-breed," he said, "letting a few Chippeway ghost yarns scare you. We come for that rock, and we're going to get her."

Get her they did after an adventurous trip up river, forcing their fragile birch-bark through the shallows and carrying it on their shoulders as they portaged around the rapids. Some intuition led them up the west fork of the Ontonagon where, weary from a day's paddling, they landed on a tiny island in midstream. Here they rested, meditatively chewing on cut plug, and from here Jim spied a dark, irregular mass upon the opposite shore. Tarnished red-brown by the elements, this was the Big Boulder at last!

Fall was well along by the time Jim and his partner located their prize, and when winter comes to the Lake Superior country it arrives abruptly. They agreed any attempt to move the copper rock would have to await spring. On the other hand they didn't dare leave it. Someone else might find and claim it as easily as they. So Nick was dispatched to bring winter provisions from their log headquarters at the river mouth. When he returned the two set about building a log "fortress" where they could mount guard over their treasure throughout the winter. Afterwards, Jim always referred to their winter quarters as the "Rock House."

Jim and Nick took over the Big Boulder in 1842. Yet Julius Eldred had bought and paid for it in 1841.

On a Sunday in the spring of 1841, the social leader of the flourishing town of Detroit gave a tea in honor of Joseph Spencer, who had gone with the Cass Expedition to the Superior Country. Julius Eldred was among the many guests who listened wide-eyed as Spencer related his adventures. Most intriguing of all was his description of the Big Boulder.

Where the story of so big a mass of pure copper awakened mere pecuniary interest in most men, it gave Eldred entirely different ideas. He was not concerned with the value of the Boulder as raw metal. Neither did it occur to him that its source might be an immensely rich ore body. He must have been an incipient showman because he immediately longed, as the *New York Herald*

THE ONTONAGON BOULDER IN 1819

later said, "to exhibit the Boulder in the cities of the East as a splendid specimen of the mineral wealth of the Far West!"

Not one to dally when he saw a good thing, Eldred left his prosperous hardware store and set out for Ontonagon at once. When he reached the Sault, he induced Samuel Ashman, local justice of the peace, to accompany him, as he wanted his dealings with the Chippewa to be strictly according to the law.

The two sailed to the Ontonagon, and after lengthy haggling with the Chippewa chiefs Eldred bought the Boulder for $150. Ashman had come armed with legal documents, and the Chiefs scrawled their marks below incomprehensible whereases and wherefores. Then the Chippewa, satisfied with their deal, led their customers up river to inspect the purchase. Eldred made notes on equipment that would be necessary to move the boulder and returned to Detroit to complete his plans.

The hardware business or other interests prevented Eldred's return in 1842. This was the year that Jim Paul and Nick Miniclergue took over the Boulder as their own. However, the spring of 1843 saw Eldred sailing westward again on Lake Superior. In the hold of the schooner were cases of equipment, tackle, and parts of a small railway with which Eldred intended to draw his great museum piece through the woods. After landing at Ontonagon, he engaged a party of Chippewa to paddle him up the river to the Rock he had purchased two years before.

The Chippewa, through signs and pidgin English, tried to tell him that two strange white men had lived by the rock all winter. Eldred, confident that his purchase had been made first and legally, was annoyed rather than upset by this news. It was not until he came face to face with the belligerent Jim that he realized prior rights meant nothing in this wild country.

From this point on there are many versions of the story, most of them highly colored during the years they have been handed around the grogshops and dryhouses of the Copper Country. As the old-timers tell it, Jim was standing on his rights of possession and Eldred was futilely waving his bill of sale when Major Walter Cunningham, representative of the War Department in the mineral region, appeared on the scene. The Major had an official order from the Secretary of War to secure the Big Boulder and transport it to Washington.

It seems that Secretary of War James M. Porter had suddenly decided the "copper curiosity" belonged to the nation, and took it upon himself to get it through his department. Never having heard

JIM PAUL

of either Julius Eldred or Jim Paul, Porter undoubtedly thought the matter would involve little more than Army routine. Events proved he took a lot for granted.

Jim Paul flatly refused to give an inch to the authorized agent of the War Department of the United States of America.

"I don't give two hoots in hell for your orders," Jim told the

Major, drawing a pair of Sam Colt's muzzle-loaders. "I got a couple of orders here that are a lot better."

As the United States forces consisted of only the Major, the bewildered Julius Eldred, and a band of unarmed and strictly neutral Chippewa, the Federal troops withdrew. Jim Paul had defied, engaged, and defeated the United States Army.

Temporarily victorious and in undoubted possession of the Big Boulder, Jim and Nick (who appears to have taken no part in the belligerencies) set about the superhuman task of moving it to the mouth of the River. The actual weight of the Rock at that time is hard to say, since so many souvenir pieces had been hacked off by the various French, English and American exploratory parties. Today a plaque states that it weighs 3,708 pounds. A mass of this size, irregularly shaped and situated three miles above the navigable waters, would have presented a moving problem to tax even the pyramid-building Egyptians. It is not certain just how Jim and Nick accomplished its transportation.

The most likely story has it that they hired a band of Indians, an even two dozen, and with their aid drew the Boulder along a rough log track by a rude capstan. In this manner, they managed to get it below the river's boiling rapids. It was then placed upon a bateau and floated triumphantly to the mouth of the river.

Who should be waiting here but the recently defeated Major Cunningham! In the interim he had secured reinforcements; a United States Navy cutter lay at anchor just off the Chippewa village.

"Paul," the Major called across the river, "I am ordered to seize that rock in the name of the United States Government!"

"Come on over and get it then," shouted Jim.

Thereupon the Major instructed the captain of the cutter to order his men to seize the Boulder. The crew, in full Navy uniform, landed to obey their commander's orders. Jim again drew out his Colts; no doubt he also drew upon his mule skinner's vocabulary.

"I'll shoot the first son-of-a-bitch who touches that there Rock," he said.

Obviously, the tall, wild-eyed, unshaven woodsman meant every word he said. Furthermore, he had the draw. The captain saw no

reason to shed blood over a chunk of copper and left Jim Paul in possession of the Big Boulder. Now he had defeated the Navy as well as the Army.

Following this naval engagement, Julius Eldred again appears in the story. He still longed to become a showman and was convinced that if he could get possession of the Boulder, he might make a fortune exhibiting it. He had already decided his legal papers meant nothing, and certainly Jim Paul, a man who picked fights with the Army and Navy, was no man to quibble with. So he got out his checkbook and wrote a check to James Kirk Paul for at least $1,800. Some say, he later gave Jim a bonus of another $400. One thing is sure, he bought the Big Boulder all over again.

Jim Paul was content for the time being. With part of Eldred's money he bought a stock of forty-rod, rebuilt his original headquarters, and opened the Deadfall Saloon. Prospectors were arriving daily, all with mighty thirsts to satisfy. Nick Miniclergue took his share of the money to Copper Harbor, where he bought a mining permit and disappeared from the story for good.

In the meantime, poor Julius Eldred's plans met with still another and greater setback.

Secretary of War Porter had been informed of Eldred's original purchase of the boulder from the Chippewa. Communications being what they were, however, he had not learned of Eldred's later payment of $1,800 to Jim Paul. So he authorized Major Cunningham to pay Eldred $700 for the Rock, figuring this sum should settle everything. Especially since the Rock's value as raw metal was estimated at about $600.

Major Cunningham was a reasonable man. He realized that $700 was hardly an equitable sum in view of Eldred's two cash payments and his investment in equipment. And he couldn't overlook all the trouble Eldred had been through with Jim Paul and Nick Miniclergue. The Major, feeling it was the least he could do, allowed the hardware merchant to transport the Boulder to Detroit, pending further instructions from Secretary Porter.

The schooner carrying Eldred and the Big Boulder sailed into the Detroit River on October 11, 1843, attended by more excitement than the little city had ever seen. It was the first year of the copper boom and the entire citizenry came down to the dock to

see the immense nugget from the El Dorado up north. The schooner captain and his crew were hard put to fight off the curious who attempted to come aboard and see the wondrous rock.

Eldred's keen sense of showmanship made up for whatever he lacked as a trader. A forty-piece brass band marched down to the dock blaring out a welcome for the triumphant native son. Eldred delivered a stirring speech, urging the crowds to return on the next day, when the Big Boulder would be hauled through the city in plain sight of all. People drifted away reluctantly, after cheering and shouting themselves hoarse.

During the dead of night a picked crew got the boulder ashore and skidded it onto a large open wagon. Toward high noon, the next day, when a sufficiently large crowd had gathered, four powerful stallions were hitched to the conveyance and the procession moved slowly through the principal streets to the exhibition hall. Eldred, proving himself a true impresario, had built out the rock with stuffing and covered the whole with black velvet. It was only then that the citizens found they were not to have a free view, but would have to pay an admission fee of twenty-five cents to see it.

Eldred's exploitation was a great success, and Detroiters gladly bought tickets to see what then seemed to be one of the seven wonders of the world. Attendance was generous, but the box-office receipts had come nowhere near repaying the merchant-showman's investment when the War Department began plaguing him again.

By this time Secretary Porter had heard the whole story of the incidents at Ontonagon, including the defeat of the Army and Navy. No one knows whether it was pique or personal pride; at any rate, Porter wanted the copper rock, willy-nilly. And just to be sure there would be no further delay, he sent the naval cutter *Erie* to Detroit for the sole purpose of bringing the boulder to Washington. Eldred held the *Erie's* officers to a promise made by Major Cunningham, and embarked with the rock for the journey eastward.

They sailed across Lake Erie to Buffalo, down the Erie Canal and into the Hudson, and finally into the Potomac to Georgetown. Eldred was a morose cruise passenger, guest of the government, as far as New York City, his precious boulder beneath his feet in the

cutter's hold. He hurried from New York to Washington by train where he pleaded fruitlessly with Secretary Porter: "Give me back my boulder."

Porter must have been a stubborn man; certainly he stuck by his convictions. He claimed that, by right of treaty, the copper rock was the property of the government. Even so his department was willing to pay $700, or more than its value as raw metal. Beyond this he refused to budge an inch.

For the next four years, Eldred hung around Washington lobbying for his hobby. He saw congressmen and senators, arguing, pleading, and finally begging them to give him his Boulder. His two sons came to join him in what was by now his lifework. Commissioner of Public Lands was then Senator William Woodbridge of Detroit. Eldred eventually prodded his fellow townsman into action, and an exhaustive report on the weighty matter of the Big Boulder was given to the 28th Congress of the United States.

Imagine, if possible, the representatives of a wealthy young country spending hours in debate over the disposition of a chunk of copper worth an estimated $600. The sensible thing would have been to vote Secretary Porter a fool and turn to something important. But with great solemnity, an act was proposed and approved by Congress on January 16, 1847,

> to allow and settle upon just and equitable terms the accounts of Julius Eldred and Sons for their time and expenses in purchasing and removing the mass of native copper, commonly called the Copper Rock . . . the sum of $5664.98.

One wonders just how Congress arrived at this odd sum—particularly the ninety-eight cents. The act, however, serves to give an idea of the exaggerated importance which surrounded the entire history of the Big Boulder. It was not until the Government of the United States took possession that interest waned. The Big Boulder was moved from the War Department to the Patent Office and finally to the United States Museum where it lay in a dusty storeroom from 1858 to 1881. The Congress which bought it had long since dissolved and the fickle public had forgotten it.

Then, in 1881, Alfred Means, editor of the *Ontonagon Miner*, traveled all the way to Washington to locate the Boulder. He

harassed his congressman until the rock was hauled out into daylight again and placed in what is now the Smithsonian Institution. Today, thousands pass it daily with hardly more than a glance.

Jim Paul, however, never lost interest in the boulder he always called "my rock."

When he heard of the congressional grant to Eldred he pounded an immense fist on his Deadfall bar and told the customers, "Hell, if the government will pay five thousand greenbacks for a rock I brung down river, single-handed, that's my line of business from now on."

For a while he haunted the wilderness, searching along every river and stream for more copper rocks. He made one or two sizable finds, one of which he was able to sell to a visiting professor from a college in Massachusetts. Just about this time, the hard-shelled Jim fell in love. In between his boulder-hunting activities he paid court to Amanda Chandler, and no sooner had she gotten him to the altar than she forcibly changed his way of living. Amanda, who was known for her virtue and gingerbread, was no small-scale reformer. She bought a set of gilt-edged books and quickly transformed Jim's Deadfall into a temperance hotel called the Exchange House.

Jim took the pledge and plied visitors to Ontonagon with accounts of his early exploits in lieu of the scarcely more potent forty-rod. His highly colored version of the siege of his "Rock House" was the Copper Country's favorite yarn and circulated wherever men dealt in Lake copper. You could hear it in the stock exchanges of Boston, New York, and London as well as in the dry-houses of the mines.

But, as Jim told guests at his Exchange House, the boulder business was over. Bigger and more valuable masses of solid copper came out of the Lake Superior mines. These, however, were mined from deep in the greenstone and traprock. Never again was so big a mass as Jim Paul's Boulder found on the surface.

NOTE: The question as to just who had the best claim to the Big Boulder is an interesting one. A treaty had been made with the Chippewa in 1826 giving United States citizens the right to claim minerals found on the surface (as opposed to mining). This treaty alone, it

would seem, gave Eldred clear title. To strengthen his claim, he held a bona-fide license to trade with the Indians at the time he purchased the Boulder in 1841.

Jim Paul's claim thus seems decidedly secondary to Eldred's and at best could be based only on possession.

A second treaty was made with the Chippewa late in 1842 through which most of the Upper Peninsula was ceded to the United States Government. Thus what rights the War Department had in the matter would seem to be based only on the fact that the Boulder lay on Federal land.

Incidentally, until he became obsessed with the Big Boulder, Eldred was considered a successful and levelheaded Detroit businessman; but neglect of his affairs ruined him, and he died a broken man in 1851.

CHAPTER IX

NUMBER 98 TAKES A JACKPOT

A YANKEE TAVERN KEEPER named Sam Knapp put up the shutters of his Vermont inn one evening in 1844, and on the next day headed westward to cash in on boom copper. Sam was as well fitted for copper mining as most prospectors, having spent sixteen years of his adult life working in a woolen mill plus some two years serving Vermonters at his public house. His immediate excuse for departing to the wilds of northern Michigan was ill health—a pretext also employed by the prospecting Pittsburgh druggist, John Hays. The salubrious Lake Superior air had so magical an effect on Knapp's physical condition that he was soon far more active than many presumably more robust fellow prospectors.

Perhaps the long hours Sam had spent dispensing good West Indian rum had made him a more thoughtful man than the general run of copper hunters. Certainly, he was blessed with far more common sense. Instead of piling off the little schooner *Siskowit* at Copper Harbor, Sam stayed on board and sailed farther west, to Ontonagon. Like almost everyone else in the country, he had heard much of the immense copper boulder Jim Paul had hauled down river to Ontonagon village. But where your harebrained prospector thought only of finding others as big or bigger, Sam laid plans like a genuine mining man. He intended to search for the mother lode from which Jim's boulder had come.

This failing, the levelheaded Knapp planned to play still another card in the game of prospecting. It was this hole card, in fact, which finally won for him one of the largest hands ever taken in the Copper Country gamble.

Just how Sam put in his time for the next four years is only vaguely recorded. But he had come West armed with a number of letters of introduction and testimonials of character and, with the

aid of these, apparently had no trouble keeping busy. It is certain that he picked up about all there was to know about prospecting and mining during those four years, for he wrote, in 1847, a valuable and discerning report on the geology of the Ontonagon region which was accepted by scientists as authoritative.

Some time in 1848, Sam Knapp was appointed the agent for the Minesota Mine, which had just been incorporated. At the time, the company's principal asset was the ninety-eighth permit issued by the War Department for mineral lands in the Copper Country. The company itself was none too stable, what with disagreements with several claimants as to who owned the lands covered by the permit. Most of Ontonagon village ignored the corporate title and referred to the location simply as "Number 98" or "Old 98."

When Sam was hired, the Minesota was strictly a prospect and definitely no mine. Test pits had been sunk here and there on the property, and at one point a shallow, shaftlike excavation had been put down. But in spite of the fact that Sam held the title of "Mine Agent," he was, in reality, nothing more than a salaried prospector. Indeed, it was up to him to find a mine if his title was to have any meaning.

After four years' experience on the range, Sam was a far cry from the tenderfoot, former innkeeper and mill hand who landed in 1844. He had seen dozens of popular fallacies exploded, and he had learned to discount the constant rumors that sent so many men searching the south shore of Lake Superior for copper in solid chunks. Already he had given up hope of finding the source of Jim Paul's boulder, in fact had concluded no one ever would find it. Now Sam Knapp was ready to demonstrate how useful common sense can be in prospecting.

About this time, prospectors up and down the copper range were finding veins of copper at the bottom of pits and depressions which visiting scientists said were pre-Columbian mines. The Copper Falls Mining Company, located near the boom town of Eagle Harbor, had put down a shaft on a prehistoric pit, and in 1847 the company produced 45,000 pounds of ingot. The Siskowit and the Ohio and Isle Royale mines, both out on Isle Royale, were working ancient pits and gave promise of being highly profitable enter-

prises. The Siskowit alone produced 31,360 pounds of refined copper in 1849. At least a dozen other mines along the range were in the course of development on other ancient pit sites. Naturally, a levelheaded fellow like Knapp would see the possibilities in searching "Number 98" for low places and depressions which might turn out to be pits of the prehistoric miners.

It was late in 1848, when Sam made his great discovery. The nine square miles of the ninety-eighth grant were deep under a mantle of snow, and even where a thick stand of pine protected the ground two to four feet of snow had drifted over it. While Knapp was no "hot-stove" prospector who set out only when the thermometer was congenial, he had just about concluded that the snow had hidden for the rest of the winter any ancient pits which might be located on the Minesota property. Sam and two companions, in fact, were on their way back to the company's log-cabin headquarters, resigned to the tedious wait for the spring thaws, when they entered a large clearing in the pine. Obviously, the level of snow was below that of the surrounding area. Because of the clearing's considerable size, a less alert and imaginative man than Sam might have thought it merely the result of a freakish whirlwind which could easily have scoured out the opening.

Sam, despite the pleadings of his shivering companions, insisted on poking about the depression with a sharp-pointed staff. At one point, it sank deep beneath the level of the snow. Now, scenting a real discovery, Sam set to work with a shovel. The snow flew and the bitter wind whistled, but soon the flying shovel uncovered the opening of a cavern. Crawling in, Sam was met by five hibernating porcupines bent on escaping, and almost withdrew in disgust. But in he went a second time and, scratching away the dirt, twigs, and rotting leaves which littered the cavern floor, called to his companions that they had found a man-made cave. Perhaps even the site of an ancient mine!

His blood warmed by the discovery, Sam sent his two co-workers back to headquarters for lanterns, picks, and some black powder, while he stayed to dig as best he could in the rapidly failing light. The party began excavating at the mouth of the cavern and, as they gradually removed the rubbish, they came upon stone hammers, milling stones, and pieces of rock which had undoubtedly

been used in primitive mining. At the bottom of the excavation they found a large chunk of native copper. Digging around this mass, they discovered that it rested on a cribbing of rotted logs, about five feet above bedrock. The cribbing was so badly rotted that it was clear it had been built by some ancient mining gang in the process of bringing the mass of copper to the surface. The only clue to the era of the miners was found on a tree which had taken root at one side of the bottom of the pit. On sawing it down, later, Knapp found it had 395 annular rings. With the length of time necessary to fill the pit with washed-in dirt, rotted twigs, and leaf mold, the ancients must have left the Minesota pit long before Christopher Columbus moodily wandered the streets of Genoa possessed with a revolutionary idea.

By the time the pit was entirely cleared out, ten cartloads of stone hammers and various crude stone implements were hauled away from the excavation. Next to those incredible ten thousand pits on Isle Royale, Sam Knapp's pit must have been the scene of the most ambitious prehistoric mining enterprise on Lake Superior.

Exciting as the find would have been to an archeologist, to Sam it was nothing compared with what he saw at the bottom of his pit: a solid vein of pure, native copper—*five feet wide*—set off by its greenish blue tinge from the surrounding rock. And there was no telling how far the vein would run nor how deep it might go. Along toward spring Sam began to get an idea of the extent of his bonanza. Digging in another pit which was disclosed near by as the snow melted, Sam and his men found a mass of native copper eighteen feet beneath a matted mass of decaying vegetable matter. It proved to be a chunk of solid copper ten feet long, three feet wide, and nearly two feet thick. It weighed over six tons.

Copper at the time was worth whatever you could get for it, but twenty-five cents a pound would be a reasonable minimum. At that figure, Sam Knapp's six-ton nugget was worth about $3,000 in New York. It was not a bonanza befitting an 1890 El Dorado like Alaska, but you will remember this was the simpler 1840's. You can imagine the fabulous tales which traveled from the first mining-boom camp of the United States and spread around the world. The size of Sam's nugget grew in telling from

six to sixty, then probably to six hundred tons—its value from $3,000 to $30,000.

It was fortunate for the Minesota stockholders that Sam Knapp was a practical as well as a venturesome man. Had he been as shortsighted and prodigal a person as Ed Hulbert, who uncovered the Calumet Conglomerate a little later, Sam might have quarried out all the mass copper in sight and, in the course of a year or so, have had a huge open pit instead of a mine for his greediness. But Knapp, despite his early occupational detours, was a born mining man. Looking to the future, he put down a shaft, built a permanent surface plant and sought to tap the rest of the lode as it traveled deep underground.

He was faced with endless criticism from avaricious stockholders who were more anxious for an immediate dividend than for a number of dividends later. Knapp was even forced to ask for an assessment to carry on his development work when the Minesota shaft was cutting through solid copper. He fought the stockholders for four long, unprofitable years before agreeing to the first dividend in 1852. Then, when the shareholders split $30,000 among themselves, they voted Sam Knapp quite a fellow after all.

Once he had the mine running smoothly, the Minesota became one of the wonders of the mining world. It still holds the record for producing an immense amount of copper from an infinitesimally small piece of the earth. Mining engineers, geologists, and university professors from all parts of the world came to see the huge masses of pure copper which were shortly being hoisted out of the Minesota with almost monotonous regularity. Most of the visitors purchased a souvenir chunk or two to be shipped home. Practically all the museums, libraries, and science departments of colleges and universities then in existence obtained fragments of Minesota mass copper for their specimen cases. In fact, a good deal of the Minesota's handsome income was derived from the museum trade.

The mine broke all records in 1856, when miners uncovered the largest solid mass of pure, native copper ever found. As recently as 1905, old-timers were still arguing over its exact size. That year the fifty-year-old argument was carried into the "Letters to the

Editor" department of local newspapers. John Senter, long the Du Pont Powder Company's agent in the Copper Country, stated that the historic mass of copper weighed 420 tons. The indomitable schooner captain John Stannard was sure it weighed 564 tons, and a Mr. Mercer was equally sure that it had weighed 547 tons. Doubtless, no one ever knew how much the mass really did weigh, for it was so huge it had to be cut into a number of pieces before any of it could be hoisted to the surface.

Whatever its exact weight, the Minesota mass was responsible for a tale that traveled across the Atlantic. Brokers and traders in commodities on the London exchange—then the principal copper market of the world—nodded their heads sagely when the news of the Minesota mass and its accompanying rumor reached them.

"Just as we thought," they told one another. "That American Copper Country is only a freak. There's a lot of copper out there —but it will bloody well cost those Yankees more to cut it up and get it to the surface than the metal's worth."

For a time, this story appeared to be fact. Twenty men labored mightily for fifteen months just to work around the Minesota mass and dislodge it from surrounding rock. They set off keg after keg of black powder, until 2,750 pounds had been touched off. It was more than a year before the cutting up process could even begin.

The mass was so irregularly shaped that any dimensions are approximate, but it was at least 46 feet in length, 18½ feet at its widest point, and 8½ feet thick at its thickest. In those days masses of copper were cut up with three-quarter-inch chisels driven by two men with sledge hammers. The third member of the cutting crew set the chisel to cut about a half-inch deep, and then the alternate blows of the sledge wielders gradually drove it down through the malleable metal to the hilt. As the chisel was driven downward, a strip of copper a half-inch thick and as long as the length of the chisel was broken free from the mass, and when the chisel had reached its full depth the strip was bent forward. After this process was repeated a dozen times, a fanlike group of strips had been formed. These were cut off by driving the chisel horizontally at their base. Then the cutting crew began all over again.

While it cost the Minesota Company about $18 per square foot to cut up the mass and it was considered a good day's work to chisel free a single square foot of surface, the rumored paradox of Michigan copper was hardly accurate.*

After the famous Minesota mass had finally been cut into small enough sections to hoist to the surface, the chips from the cutting operation were gathered together and were taken up the shaft. The Minesota's superintendent recorded twenty-seven tons of chips in all. These were packed in barrels, shipped to market and the Minesota Mining Company received a check for an amount which just about equaled the pay roll for the cutting crews. To further disprove the tale that Lake copper had been, paradoxically, too extravagantly deposited, the various sections of the mass brought in a total of $150,000. Moreover, as nearly as can be determined, this figure does not include a considerable revenue from museum pieces sold to visiting curators.

The Minesota would probably have acquired the distinction of being one of the world's richest copper mines, even if the record-breaking mass had never been discovered. No other copper mine on earth whose history has been recorded has produced so much copper in proportion to the amount of labor and capital expended.

During its development years, the Minesota came close to paying its own way with the copper masses—an unheard-of thing in copper mining except in the Copper Country. By the end of the four years 1852–1856 the stockholders' investment in the mine had doubled itself, and by 1876 they had received thirty dollars in dividends for every dollar invested. At one time in the fifties, more than 2,000,000 pounds of mass copper was in sight, much of it all ready for cutting up.

* The truth of the matter is that, while Lake copper men would have much preferred to find the same amount of metal in conveniently sized chunks, they certainly had no fear that immense masses would prove unprofitable. In fact, when large masses were found in other mines, it was an occasion for the mine's stock to increase in value.

Other large masses found in Copper Country mines and their reported weight are as follows: Quincy, 300 tons; National, about 200 tons; Flint Steel, 125 tons; Aztec, 100 tons; Mass, 80 tons; both Rockland and Caledonia mines, 40 tons. Two masses, larger in total quantity of metal than that of the Minesota were found in the Cliff (1,800 tons) and the Bay State (600 tons). Strictly speaking, however, these were a series of masses connected by stringers, and thus the solid Minesota mass remains the champion.

There was another period when the presence of mass copper actually hindered operations. In sinking Number Two shaft, the miners were forced to stop work at the sixty-fathom level. It was necessary to sink the shaft through solid copper and it required the better part of twelve months to cut through the metal. The Minesota then established another unique record. Probably nowhere else on earth has there been a mine whose skips ran up and down through a solid copper shaft.

Examples of the amazing richness of the Minesota could continue indefinitely. But the real quality of this mine is not to be found in the cold figures of the Department of Mineral Statistics, State of Michigan. It is cherished in Copper Country annals largely because of the lusty gentlemen who conducted its affairs. The Minesota was one of the few mines on the copper range whose officials comported themselves with anything like the traditional flourish of western mining kings.

The Minesota's directors were utterly unlike the stiffish, unapproachable Boston brahmins who were running the Calumet & Hecla farther east and north on the range. They strove earnestly to emulate the plainness of the proverbial old shoe and proved their unimpaired ruggedness by outswearing the toughest trammers. They quarreled noisily over who was to pay for the drinks at the Bigelow House Bar, and several whose early education had taught them better-took to macerating the King's English elaborately to make certain no one would miss their democratic attitude. These Minesota princes were self-conscious in their excellently tailored, broadcloth suitings and were apt to finger their heavy silver watch chains nervously, while talking with old-time friends who were still awaiting the *big chance.* Whenever the opportunity arose, they hastened to prove that good luck had not changed their homely characters.

Old-timers of Ontonagon still enjoy telling how an elegant Frenchman with the resounding title of Celeste Delfie—Marquis de Pontalba, went bankrupt after a boorish Minesota official had wounded his finer sensibilities.

The Marquis came to Ontonagon with a large quantity of francs and a burning desire to become a smelter magnate. The idea itself was not a bad one, for there was no smelter nearer than Portage Lake, fifty miles off by a miserable road. Marquis de Pontalba's

regal background and his autocratic bearing, however, were not the happiest attributes for a smelter operator in so rough and ready a district as the Ontonagon region. While he spoke English fairly well, the Marquis never learned to "think American." He built his smelter in 1862, and then sat back waiting for the obviously low-born mining men to call, hats in hand, to beg him to smelt their copper.

After several months had passed without so much as a pound of copper rock for his two reverbatory furnaces, the Marquis realized that, however odious the task, it might be necessary to make a concession or two to the peasants who ran the mines. One day he put on the finest fur coat in all of Michigan, a full-length garment of Russian sable, and calling for his sled and famous dog team—Nero, Hero, and Plato—he drove over to the Minesota Mine office. The official then in charge (it may and may not have been Sam Knapp) was idly glancing out the window as the Marquis mushed up to the door. Such ostentatious swank irked the plebeian mine executive. As Celeste Delfie, Marquis de Pontalba, entered the office, he not only hoisted his official feet to the desk but let fly a heavy stream of tobacco juice in the general direction of the Marquis' left foot.

The actual dialogue which followed has not been preserved. Legend has it, however, that the Marquis drew himself up to his full, regal height, his eyes glaring above his waxed mustache and in a tone reminiscent of Louis XV ordering a guillotining, declared that the Pontalba smelter would smelt only the copper of gentlemen. Then he made clear that no one who would chew Peerless Cut Plug could possibly have that status and hence, under no circumstance, would he defile his furnaces with Minesota copper. After a few more such subtle insults, the Marquis stalked out and drove away. He had washed his hands of the one important copper producer of the Ontonagon district and so foredoomed his smelter to failure. Marquis de Pontalba managed to hang on until 1867, at which time he ran out of francs and left the Copper Country along with Nero, Hero, and Plato.

From 1848 to 1870, the Minesota was run with a lavish hand. Its officials couldn't be bothered with milling rock containing less than sixty pounds of copper to the ton. At one time the manage-

ment misplaced two kegs of solid silver nuggets and dismissed the loss with a shrug of their shoulders. No one troubled to hunt them up, and two years later they were found in an abandoned shed.

The Ontonagon Plank Road is another instance of the Minesota's prodigality. This thirteen-mile path of hardwood, capitalized for $50,000, was largely financed by the company. Officials couldn't long countenance, for so promising a mine, primitive water transportation on the oftentimes shallow waters of the Ontonagon River. After the building of the Plank Road, Minesota masses traveled behind fast horses to deep water at the port of Ontonagon.

For twenty-two years the Minesota prospered and spent. Six thousand souls lived comfortably on Minesota wages. Miners and their families worshiped in a company-built church with a forty-six-foot steeple. The boom towns of Rosendale and Williamsburg grew so rapidly that they automatically merged into the town of Rockland.

It was about this time that Sam Knapp and his wife Sarah, the comely Massachusetts girl he had brought West with him aboard the *Siskowit,* departed for Jackson, Michigan. Sam left the Minesota in 1868, a wealthy man, and arrived in Jackson in time to help frame its city charter. He remained to become one of its most solid and solvent citizens. The Knapp home was one of the show places of the region, and people journeyed from far and wide to see the rare plants in Sarah's conservatory. When Samuel Knapp died, in 1883, he left most of his copper fortune to the First Methodist Church of Jackson.

Shrewd as he was, Sam couldn't have anticipated the collapse of the copper market which was to occur just two years after he exchanged his role of mining tycoon for that of city father. In 1870, for the first time in history, copper went below twenty cents a pound. The low couldn't have come at a worse time for the Minesota. The deep levels were already growing leaner, and if the Minesota was to work the poorer rock at a profit, the mine needed a more efficient and powerful hoisting engine. The directors hesitated to spend the money until the market righted itself, and they shut down the mine.

But the miners still had faith in the fabulous lode. A group of

them approached the officials and proposed to work the property themselves, offering to pay for the privilege with a percentage of the copper they mined. These tributors, as they were known, took out thousands of pounds of mass copper and, to the intense embarrassment of the Minesota directors, made a handsome profit. The success of these and a number of other tributors gives sound credence to a universal belief held in the Copper Country to this day. Because the mine was allowed to fill with water, the tributors worked only the upper levels. Consequently, there should be plenty of mass copper still left in the deeper drifts and stopes.

In the nineties, the Michigan Copper Mining Company took over the old location and opened a new vein known as the Calico Lode. This lode was worked through Number Ten Shaft of the old Minesota, and the rock looked so promising that the Michigan's directors authorized the building of a large stamp mill at the foot of Keweenaw Bay. The mill, however, never crushed a pound of rock and the shareholders paid in $2,000,000 without a cent in return. The Minesota land was worked sporadically by several companies until 1920, sometimes producing a fair amount of metal but seldom paying a dividend. After 1921 and periodically ever since, diamond drill crews have appeared on the property hoping to bore into new masses. So far the drill cores have been discouraging.

The Minesota, paradoxically, marked the end of a Copper Country era years before misfortune actually descended upon it.

Mining men of the 1850's couldn't know, of course, that the Minesota would be the last company to work a lode so rich that it could produce a profit no matter how haphazard or profligate the methods. The persistent dividends of the Minesota were a continuous rebuttal to definitely changing conditions: systematic, businesslike mining enterprise was coming to the range and was coming to stay. At a time when the Minesota should have been regarded as nothing more than a living monument to the prodigious boom days, otherwise hardheaded mining men were still intent on developing "second Minesotas."

Their diehard attitude is understandable. The amygdaloid mines and later the shafts on the Calumet conglomerate were costly

projects, requiring large amounts of capital for development and equipping. They took years to prove up and even then were as apt as not to fail. Yet, all the while, the three fissure mines—the Minesota, Central, and Cliff—apocryphal though science called them, were thriving and paying comfortable dividends. The Central made a profit on its first year of operation and continued to pay dividends almost uninterruptedly into the nineties. The continuous success of the Cliff has already been described.

No wonder many mining men read the Minesota's latest financial statement and said: "To hell with the geologists and their maps of the mineral range! Mining's still a gamble, and we'd rather bet on a long shot. As far as we're concerned, a mine isn't a mine unless it's a near-Minesota!"

The persistence of this hopeful attitude is illustrated by romantically inclined historians who call the Minesota the "Mother of Mines." While the Minesota *did* inspire the sinking of a large number of shafts, not one of them was profitable. In fact a cynic might term the Minesota the "Father of Failures."

Of the 112 discoverable mining corporations which have operated in Ontonagon County, only the Minesota has paid more in dividends than it collected in assessments—in short, made a profit. The three companies which came anywhere near this goal—the National, Ridge, and Ogima—paid a total of $435,000 in dividends on an investment of $960,000.

Actually, the Minesota's place in mining history was fixed more by the spectacular nature of the lode than by the mine's achievements either in dollars or in pounds of metal. The Central Mine produced half again as much copper—52,000,000 pounds in comparison to 35,000,000 by the Minesota. The Cliff Mine paid about a half-million dollars more in dividends than the Central and close to a full million more than the Minesota.

Despite all the fuss and fury over mass copper in the early days, all the chunks of pure metal taken from the fissure veins between 1845 and 1940 together amounted to less than three per cent of the total of 9,108,434,585 pounds mined in the district during that period.

Obviously, the days of the Minesota and Cliff were the infant days of Michigan copper.

CHAPTER X

SILVER LAGNIAPPE

A TENUOUS THREAD of pure silver is woven through the history of Michigan copper. From the earliest days, quantities of free silver, mixed but unalloyed with the native copper, have been found from one end of the range to the other. Occasionally rich vugs, or pockets, produced brief bonanzas to demonstrate at the same time that the gray metal was deposited without much rhyme or reason. But irregularly and unexpectedly as it was found, silver popped up often enough to create a strange counterplot to the main Copper Country story.

The greater amount of silver taken from the copper range was never recorded by mining company treasurers. It was brought up from underground in miners' dinner pails!

Strangely, this bonus of dimes to a miner's regular pay didn't involve even a whisper of dishonesty. The incorporating papers of Michigan mines usually read: "a company formed for the purpose of mining copper." Since nothing whatsoever was said about silver, the miners interpreted the phrase with complete literalness. Even the mining companies wondered whether their rights in the matter weren't rather technical. At any rate, the result was a fantastic game of finders-keepers, carried on continuously between the miners and the company bosses. The unspoken, though none the less accepted, rule said that silver belonged to whoever found it first. The only penalty in the game was inflicted for allowing a boss to see the prize. In that case, the miner gave up the silver willingly. He had simply lost the inning.

A visitor to the Copper Country in years past was treated to a startling illustration of the final play in this unusual game. Walking along the streets of a mining location like Greenland, Central, or Phoenix late at night, he could hear a weird tap-tap coming

from the darkened homes of miners who should have been fast asleep. His guide explained calmly that the rhythmical beats were caused by otherwise honest miners breaking silver nuggets free of clinging rock. No one can say how much silver was extracted in those makeshift kitchen stamp mills but it is fairly certain that two of Chicago's wealthier families founded their fortunes on profits made from dealing in this extralegal silver.

Despite the activities of the miners, a large amount of silver still managed to reach the mining companies' treasuries. The metal was usually deposited most generously towards the surface and while a mine was in its first stages of development the company forces kept closer watch upon employees.

Some of the earlier mines found so much silver in the upper levels that for a time the owners looked upon copper as merely a by-product. The Isle Royale, Huron, Portland, and Shelden & Columbian mines, to name a few, made a great deal more profit from the gray than from the red metal during their first years of operation. The Lake Superior Mine took out so much silver in the course of the first twenty-five feet of shafting the shareholders were informed that thereafter it was to be a silver mine. During the first era of the Cliff Mine more than four million dollars' worth of bar silver was credited to the company account at the United States Mint in Philadelphia. In general, however, the deeper the shafts went, the less silver was found, and mine owners inevitably came to the conclusion that their properties were copper mines after all.

Old-timers relate a thousand stories of finding huge nuggets of silver underground. Most of them are simply Copper Country variants of typical mining yarns heard the world over. But down at Rockland on the south range, oldsters still amuse their grandchildren with an anecdote they like to think could have happened only in Michigan. It is the story of young Kurt Grossbeck and his sixteen-pound (not ounce) chunk of solid silver.

As the yarn goes, Kurt was the son of a German miner working at the National Mine. The mine was operating only sporadically at the time, and the Grossbeck family fortunes were most precarious. As was the custom of the Rockland boys, Kurt spent his hours after school "cobbing," or picking over the mine dump

heaps, searching for small copper masses which could be sold at the mine offices. On this particular day it was threatening to rain, and not many of Kurt's friends were cobbing. So when he pushed aside pieces of ordinary rock and saw an unusual-looking chunk of grayish white material there was no one to interfere as he struggled to free it. He was only ten, and it was all he could do to carry the sixteen-pound chunk home.

Kurt's father came home tired and worn from the day's shift and hardly listened to his son telling of the unusually colored piece of rock in the family's front yard. After dinner, he grudgingly went out to look at it. His weariness was gone in an instant. Any Copper Country miner worth his salt could tell what the mineral was immediately. Bar silver was worth upwards of a dollar an ounce at the time. Young Kurt, single-handed, had brought something like $250 into the needy Grossbeck family exchequer. At school next day, he was the hero of all his companions; and among the legends of the Copper Country he ranks with the Dutch boy whose finger saved the dike.

There is more to the story of silver in the Copper Country than Arabian Nights vugs, questionable bonuses to miners, and pretty tales of nuggets found by children. Once there was a bona fide silver rush, run off in the best western style. It began in 1872 in the Iron River region down at the south end of the range and ended in abortive failure, differing little from similar silver flurries which sprang up almost every week during Nevada's boom days. In fact, the Copper Country's silver rush would hardly be worth mentioning if it were not for its extraordinary hero, a man who would surely have made and kept a fortune had fate led him to the Washoe.

In 1855, Austin Corser, the hero of this tale, discovered a vein of native silver alongside the Little Iron River. At once, he began a demonstration of the difference between the East and West—a living example of Kipling's verse.

The land on which he made his discovery was not open to entry just then. It had been granted to one of those railroads which were forever being projected by the visionaries who gathered daily at the Bigelow House bar in Ontonagon. The

grant was valid for another seventeen years, whether so much as a foot of rail was laid or not.

Seventeen years was a lifetime to your western prospector, but it was as nothing to Michigan's Mr. Corser. Moreover, when a western prospector made his "Big Strike" he customarily got very drunk and shouted the news all over town. Old Pancake, they say, was drunk for several weeks after he staked his claim on the Comstock lode. Crazy Bob Womack, once he had finally uncovered the El Paso lode of the Gold King, staggered up and down the streets of Colorado Springs for days and while temporarily short of whisky money sold his claim for a mere $500. Obviously, western prospectors lacked patience and self-control.

Austin Corser, on the other hand, built himself a log homestead near his silver vein, said nothing, and calmly waited out the seventeen years until the railroad grant expired. He didn't take as much as a single drink and very little food all that time. His two daughters grew to womanhood during this hungry period and considering that there was also a Mrs. Corser, a family man can appreciate the difficulties Austin must have had in keeping three undernourished females peacable all those years.

Corser's long wait would seem to confirm the belief of the orientals who hold that a light diet is conducive to clear and extensive thinking. Once the seventeen years had finally passed, it was soon evident that Corser had given his silver vein no little thought during the lengthy wait.

The railroad grant expired in 1872 and Corser's day had finally arrived. He hurried to Ontonagon and bought the land along the Little Iron River from the government agency. Then he hurried to the Bigelow House bar seeking the reward for his seventeen-year vigil. The five-story wooden hotel was the gathering place of capitalists, promoters, and speculators from half the world over. It vied with the Douglass House at Houghton for the distinction of being the financial headquarters of the Copper Country; in fact, during the seventies, most of the mining ventures of the time were cooked up in one hostel or the other.

Austin was known in the Ontonagon region as an honest if somewhat peculiar prospector, and he had little trouble gaining the ears of a group of Pennsylvanians. They had come to the

district looking for a good thing, and Austin's vein of silver appeared to be just what they sought. Then and there, the Scranton Mining Company was formed, and Corser was offered a large block of stock in payment for his property.

Having had so much time to think the matter over in advance, he turned this proposition down flatly. "I'm a poor and hungry family man," he said. "I want to sell out, lock, stock, and barrel, for cash."

Soon the Corser family began to fatten and grow plump. Austin bought a suit of store clothes, a notably loud vest, and a huge silver watch chain to swing across it. He returned to his log homestead only at night, spending his days in the lobby and barroom of the Bigelow House as befitted a mining man of his now high standing. This standing grew each day, for the Scranton mine was showing great promise and the Pennsylvanians were more than satisfied with their purchase. Things at the mine, in fact, looked so good that Austin was the butt of a good deal of joking over his shortsightedness in refusing Scranton stock. Austin merely smiled knowingly at this twitting.

One day while Corser was chatting over the price of copper and silver with his cronies he dropped a seemingly innocent remark which instantly electrified the village.

"You know what," he said, "that vein I found weren't really on the property I sold to them Pennsylvania fellers. It's really over about half-mile east of my homestead by the Big Iron River."

Word of this astounding statement sped through Ontonagon like the fire which later destroyed the town during a high wind. The promoters, speculators, and hangers-on went into action immediately. Everyone knew that property along the extravagantly named little stream was still government property and thus wide open for entry. A rush to buy up every acre near the Big Iron was on in no time and a block-long line of impatient men soon formed outside the agency. Those who took time to notice saw that one rather large tract of land had been purchased some months before Corser dropped his casual remark.

Captain Daniel Beaser was the purchaser and shortly displayed the reason for this foresight. He announced that he had lots for

sale in a brand-new town, already plotted and christened, most appropriately, Silver City.

Old Dan Beaser had been a schooner captain on Lake Superior from the beginning of the copper rush. He had outwitted the treacherous lake more times than he could remember, and had retired only when steam came along and demanded a new breed of masters. Not a soul in Ontonagon doubted the captain's ability as a skipper. Men did, however, strongly doubt Captain Beaser's ability as a seer and a prophet.

Yet, months before Corser started the Iron River silver rush, the captain had laid out his Silver City project. He had even named the streets—some recalling his days in the Federal Navy during the Civil War. Farragut Avenue intersected Ericsson Street, and Lincoln Boulevard was just north of Meade Avenue. Furthermore, Silver City seemed remarkably handy to the place where Corser said his real lode lay. Quite a coincidence, people thought, especially when it was recalled that Beaser and Corser had always been friends.

Silver City boomed as the locations were developed. On the outskirts of the town, gangs of miners were busily opening a dozen shafts. The new mines were named with best western flourish. Among them were the Argentine, the Aurora, the Silver Mountain, the Silver Cliffs, the Mammoth, and the triumph of them all: the Eureka Silver Star. A hotel was erected in the town on a site which Beaser had thoughtfully marked on his plat. Naturally, the promoters, speculators, and miners wanted to live near their work, and lots in Silver City sold nearly as rapidly as the mineral land on its edges.

Captain Dan Beaser was doing very well for himself. And the self-styled financiers who peopled the Bigelow House bar took it for granted that Austin Corser was sharing in the real estate profits. They never knew for sure. But they applauded Corser's sagacity on general principles. Surely he would not have broadcast the news of his second silver find without a hidden motive. One thing is certain: he never attempted to mine it himself, yet he lived in comparative affluence from the day of the founding of Silver City.

One of the many peculiarities of the affair was that the mines

located near both of Corser's veins were taking out high-grade rock. Two mines located on his second vein sent their rock away to reputable and accredited assayers. The reports came back that the rock of one would run $205.40 worth of silver to the ton; the other mine indicated a yield of $1,716 coin silver to a ton of rock.

In the spring of 1875, the owners of the Scranton, Ontonagon, Superior, and Collins mines, all located near Corser's original discovery, pooled their capital and erected a reducing mill. During August, twenty-two tons of rock was milled, reduced, and smelted, and the first bar of Iron River silver was poured. It weighed 523 ounces and was worth $732.20 in coin value. That night flags flew from every house in Silver City, and the miners got as drunk as the citizens of the town's counterpart in Nevada on pay day.

Unfortunately, after the Iron River silver barons did a little calculating, the outlook for a Michigan silver El Dorado was not so bright. They found that the twenty-two tons of rock had produced an average of only $33.28 of silver to the ton. The copper mines were winning much more than that amount of money from a ton of rock. This was 1875; the United States was still suffering from the black depression which began on Jay Gould's Black Friday in 1869. Money was tight, and capital wasn't taking any chances in developing a silver district which might well cost a great deal more than it would ever produce. The Iron River silver camp died, not of old age but of poverty. Whatever silver was left in the old shafts is still there.

As a silver boom, the Iron River rush was hardly important. As a pioneer venture in real estate, however, the activities of Austin Corser and Captain Daniel Beaser certainly are the equal of the most devious promotion conceived by modern realtors.

The strangest tale of silver found on Lake Superior has to do with a mine which wasn't on the copper range at all. This was the Silver Islet Mine, located on the north shore of the lake in Canadian waters. However, Silver Islet's development was so closely connected with the Copper Country it properly belongs to this history.

To begin with, it was the Cousin Jack, William B. Frue, dis-

coverer of the Pewabic amygdaloid lode, remembered for a dozen other accomplishments in the Copper Country, who fought Lake Superior to a standstill and made the Silver Islet possible. Furthermore, the mine was worked by Keweenaw copper miners, and the Portage Lake Ship Canal figured in the Islet's untimely end.

About a hundred yards off Thunder Cape, whose sheer cliffs all but choke off Thunder Bay on the north shore of Lake Superior, is the rocky reef which went down in mining annals as probably the strangest mining property of all time. This islet, less in total area than a niggardly city lot, lies so low in the water that it is barely able to hold its head above the lake. Ordinarily, such a rocky projection would be noted on navigation charts merely as one more nuisance to sailors, like a hundred others in Superior waters. It is only seventy-five feet by forty-five in area, and even when the lake is calm it has just about twelve hundred feet of shore line. On the calmest days, the sun dries off hardly enough area to build a filling station, were the islet a plot of ground on dry land.

But in 1868 this trifling bit of rock, as yet unnamed, proved very different from its neighbors. At the time, the Montreal Mining Company had sent an exploratory party to search the Thunder Bay region for copper. Geologists said that the rich lodes which outcropped on the Keweenaw Peninsula dipped down under Lake Superior and ought to reappear along the north shore of the lake. The party had already found a promising outcrop on near-by Jarvis Island but continued their search in hope of finding a better one.

Two surveyors, Scotsmen named Thomas MacFarlane and John Morgan, were traveling in advance of the main party and for some forgotten reason paddled their birch-bark canoe out to the nameless reef. They set up their transit and began surveying. Since the reef was solid rock, they had to chip out holes to set observation stakes. As they belabored the rock with crowbars at a point toward the water's edge they saw the rock was veined with a grayish white mineral. Following the vein, they saw that it widened as it passed beneath the water and peering into the clear, cold lake they could see the vein widen to about two feet. Under water, the lake had polished the nearly pure, native metal until it shone and

glistened like fine Sheffield plate. The two Scotsmen forgot their surveying and began prying and pinching out pieces of silver.

As evening and twilight came on, the rest of the party began to wonder at the absence of the surveyors and set out in a canoe to hunt them. When they approached the reef the rescue party saw a strange sight. The two Scots were standing shoulder-deep in the chilly waters picking away at something under water. Every now and then one would take a deep breath and disappear beneath the water entirely. The explanation was clear when the party landed. A yard or so from the water's edge was a pile of nearly a half-ton of silver nuggets and broken rock, veined with native silver.

The Montreal Mining Company, however, wanted no part of mining this strange silver deposit. As the board of directors agreed, there was enough grief mining on dry land. Pinching veins, superhard rock, seeping waters, and all the other difficulties which go with mining gave them more than enough trouble. They certainly weren't going to try to open a mine on a nearly submerged reef and thus add Lake Superior to their adversaries. They felt they were making a handsome bargain when they sold the islet and other property on the mainland for a quarter of a million dollars.

The more adventurous purchasers were a group of New Yorkers who had Copper Country interests. It is more than likely the purchase hinged on William B. Frue and his willingness to tackle so tough a job as putting down a shaft on a water-lapped reef. The New Yorkers had had occasion to enlist the services of Bill Frue to superintend some of their copper properties, and he had acquired a reputation for conquering tough mining problems. At any rate, Frue took the job; and, while Lake Superior won out in the end, Bill had her shoulders to the mat for some time.

Once the deal was completed Frue journeyed north to see what he had let himself in for. He was treated to a most discouraging sight soon after his arrival. It was calm weather when he arrived but even then, he noted, the islet stood only a foot above the lake level at its highest point. He noted as well that it was completely unsheltered and storms beginning a hundred miles away to the west would strike the point where the vein lay, in full fury. A

day or so later, Superior obligingly whipped herself into a third-rate storm blown up from the southwest. Frue, watching from the mainland, saw the rocky site of his mine location disappear entirely beneath the whitecapped waves.

Under such conditions Frue decided there was only one answer —if indeed there was any answer. First, he would construct a huge breakwater entirely surrounding the islet and so prevent the waves from washing over it. Secondly, he would build a cofferdam, or circular, watertight fence, from the islet out around the outcropping of the vein. Then he would pump the cofferdam dry and put down a shaft in the same manner as on dry land. Frue then returned to confer with the directors.

On September 1, 1870, Captain Frue aboard, the chartered propeller *City of Detroit* steamed alongside the little reef now confidently christened Silver Islet. Aboard the propeller were thirty-four copper miners, friends he had recruited in the Copper Country. In the hold were a hoisting engine, pumps, tools, and sufficient supplies to tide them over the winter. Towing behind the propeller was a barge loaded with 20,000 feet of heavy, square mine timbers to build the breakwater. Bill Frue obviously meant business.

Once they had unloaded the propeller, Frue and his men set to work building a log town on the mainland. A pretentious log home was built for Bill, and a number of smaller cabins for the miners. Then, according to arrangement, on November 3rd, the ancient side-wheeler *Algoma,* Captain Sunius, master, stood off from Houghton with Mrs. Frue and the three Frue children aboard as well as the wives and families of several miners. November is dangerously late in the year to sail Superior. The *Algoma* no sooner reached the open lake than fog, sleet, and snow closed in upon her. The old side-wheeler was no match for the wind, and during the next forty-eight hours the *Algoma* was at Superior's mercy, the specter of reefs and hidden rocks lurking on all sides. It took three long days and nights to complete the hundred-fifty-mile voyage. But, as the saying goes, the wives and children hadn't seen anything yet.

No sooner were they moved into their newly built cabins than Superior began blowing up a record-breaking winter. The ther-

mometer thereafter made a habit of minus thirty; snow piled over the log cabins, and wives and children huddled around the stoves for six long months.

Frue, however, had no patience with the weather and drove his men night and day, sawing and chopping the timbers in readiness for building the breakwater as though it were mid-July. The instant the shore of the islet was free of ice, Frue began construction. Within thirty days, the hard-driving Bill succeeded in putting in 460 feet of cribbing. It was built up to tower thirteen feet above the lake level and ran halfway around the islet. The huge timbers were bolted together in sections and then lashed to one another with heavy steel cable. For further protection and rigidity, Frue had his men anchor the cribbing with heavy blocks of stone quarried on the mainland. Now that the vein was protected from the open lake to south and west, he began building the cofferdam. By working his men eighteen hours a day, he managed to complete the watertight barrier within another month.

As soon as the dam was finished, a steam siphon was set operating to pump out the water. A few days later, seventy-five feet of the rich vein was drying in the hot August sun.

All the while the construction work was going on Lake Superior rippled and lapped at the timbers in a disarmingly, gentle mood. She blew up a mild storm or two, possibly just to keep in practice, but with such little enthusiasm that Frue hardly noticed them. She was strangely gentle all through the month the men were building the cofferdam and watched calmly as the water was pumped from it. She stood by as though she knew exactly what was going on, waiting until the vein was entirely uncovered. Then, giving Frue and his men little time for rejoicing, Superior whipped up a furious storm, and an hour later two hundred feet of the breakwater was washed out, the cofferdam wrecked, and the vein of silver again under water.

Captain Frue would not have been human if he hadn't raged at this treachery of Lake Superior. But he was not a man who gave up easily, and now, fully realizing the might of his opponent, redoubled his efforts.

He rebuilt the breakwater, constructing it much more strongly. Instead of a single wall of cribbing, he built two of them, twenty-

three feet apart, and filled the space between with great boulders and more rock quarried on the mainland. After this was completed, the breakwater had an area ten times as great as the islet itself. But again Superior showed her contempt for the efforts of men. Again she beat up a storm, snapped the eighteen-inch timbers as though they were glass tubing, and spread 3,000 tons of heavy stones around the bottom of the lake like marbles.

The Silver Islet project had now cost the promoters better than $50,000 in cash, more than 50,000 feet of heavy timber, and 6,000 tons of stone. Furthermore, word had traveled back to the Copper Country that working under the hard-driving Frue was a killing job, and it was next to impossible to replace those miners who had had enough of the islet.

Frue was still not ready to quit. Nevertheless he was ready to admit that a compromise was in order. He made no further attempt to build the breakwater all around the islet. Instead, he planned it only long enough to protect the vein from the southwest. This time, the space between the walls of cribbing was seventy-five feet instead of twenty-three. Again it was filled with huge rocks and boulders. This time, Superior was baffled, and the breakwater resisted her most furious storms. Another cofferdam was built, pumped dry, and at last work was begun on a shaft.

That same year, in November of 1871, rock which produced $108,000 in coin silver was shipped from Silver Islet. In 1872, $600,000 worth of silver was reduced from Silver Islet rock; and the following year, $2,250,000 worth of coin silver. This wealth is even more amazing when it is remembered that the mine was practically shut down during the winter, and was in full operation only about six months a year.

This was the period when the greatest silver bonanza of all time, the Comstock Lode, was in full and fabulous bloom; but, rather than being overshadowed, Silver Islet was the talk of the mining world. During one happy fortnight $16,000 worth of silver was hoisted from beneath the level of Lake Superior. For a time concentrates ran from $300 to the amazing peak of $10,000 coin silver to the ton. It was during this wondrous era that the mine produced $370,000 worth of silver in five weeks. As if these riches

weren't startling enough, a drift suddenly struck a pocket in which pure native silver had been deposited *five feet thick.*

Shares in Silver Islet were the darlings of the speculators on the mining-share markets of Boston and San Francisco. Every time news of some still more astounding statistics reached the two markets, Silver Islet shares soared higher in price. Stock in the mine which originally sold for $25 per share went as high as $2,500. Newspapers had good reason to refer to Silver Islet as the "greatest silver mine in the world."

The end of Silver Islet is as fitting and proper as that of an old prospector dying with his boots on. Bill Frue and his breakwater held Superior at bay for thirteen years. She, however, is a wily, persistent sort of female who sets out to have her way in one manner if not another.

For thirteen years, Silver Islet had fought off the waters of Lake Superior which seeped into its drifts and levels at the rate of 155 gallons every minute. Powerful steam-driven pumps were kept going twenty-four hours a day, the year around, waging this everlasting battle. The coal to make the steam was even more important to the existence of Silver Islet than men to mine its silver.

One wonders why it was that a tug towing barges loaded with the entire winter's coal supply for Silver Islet waited so late as November in 1884 before putting off from Houghton. But wait she did and ran into trouble before she had run five miles up the newly constructed Portage Lake Ship Canal. In the open lake, the waves would have kept the ice from forming, but in the placid waters of the canal the ice closed in rapidly until the tug was frozen solid.

Out on Silver Islet, one hundred fifty miles away, no one was especially concerned when the tug failed to appear on schedule. There was still a forty-eight-hour supply of coal on hand, and the boats were often delayed at this season. But when twelve and then twenty-four hours passed and still the tug was missing, Bill Frue and his men began peering anxiously southward. Towards noon on the following day, the boilerhouse engineer shouted that he had shoveled his last bit of coal. Frue ordered the men to tear down the surface buildings, rip off the sidings of the shaft house. They

broke up several rowboats and threw everything else which would burn into the boilers. Still the tug and the barges of vital coal didn't appear.

Finally, Frue and his men bowed to the inevitable and gathered around the shaft collar to mourn together as they heard the gurgle of the waters rushing to fill the mine. Superior had failed to thwart them by main strength. But she had accomplished her end—and the end of the Silver Islet Mine—aided by the icy fingers of the Portage Canal.

When the directors of the mine heard of the disaster, they announced they were willing to call off the long struggle with Lake Superior. After all, they said, the islet was no longer the bonanza it had been. The lower levels had been growing leaner, and the directors and stockholders regarded the disaster as not too disastrous. Captain Frue, thorough mining man that he was, hated to think that he was leaving a good deal of silver in the supporting pillars, underground. But there was nothing to be done about it. He and his family, like all the others, returned to the Copper Country.

Silver-veined pillars still hold up the ceilings of the drifts and stopes of the old Silver Islet. Moreover, the ceilings themselves are rich with silver; they didn't dare pinch them down in the old days for fear of a cave-in. Anyone who wants to unwater the old shafts and levels can have this silver. That is, if Lake Superior is agreeable.

CHAPTER XI

COPPER HITS A HALF-DOLLAR

DURING THE 1850's, while many mining men continued their search for second-Minesotas and near-Cliffs, the copper range was shucking its swaddling clothes and exchanging its pinafores for long pants. The district insisted, willy-nilly, on growing up. The dreams of the wide-eyed prospector and his prattle of solid copper mountains were relegated to the background by the practical visions and mature voice of finance. Polysyllabic words—"production," "tonnage," and "concentrates"—entered the vocabulary of the range, and bubbling through them were the extravagant phrases of the promoter.

Boosting on a grand scale came to Lake Superior in the person of Ransom Shelden—a fast man with an adjective.

When Shelden referred to his adopted land he never descended to the obvious; "bonanza," "Golconda," and "El Dorado," he considered trite. The Copper Country, to Ranse, was a "veritable Ophir of delitescent, metalliferous treasure." Even when hard put by the fanciful competition of returning Forty-niners, he was more than equal to the occasion. Then the copper range became "this bottomless California of unfathomable, cupriferous riches." Shelden's descriptive powers clothed the entire range in shimmering adjectives, but when he spoke of the Portage Lake Region (which was most of the time) he outdid himself.

Ransom Shelden and his brother-in-law, Christopher Columbus Douglass, might be called the fathers of this region which brought money and world importance to a fledgling mining district. The two were born many centuries too late to pile up—personally—that immense amount of traprock which went to make Quincy Hill. Nature had already attended to this matter as well as distributing myriads of specks of pure copper through the porous, amygdaloidal rock. Moreover, Superior had already spilled sixty

feet of water into Portage Lake to make it the finest natural harbor on the Lake. But from this point on, Ransom Shelden and C. Columbus Douglass took charge. It is improbable that any equal amount of real estate ever received such enthusiastic promotion as the mineral lands lying high above the waters of Portage Lake.

Shelden spent his earlier years peddling tinware from farm door to farm door in upstate New York, like that other extravagancer, Phineas T. Barnum. Tiring of this, he took on a line of essences and nostrums and worked his way westward. House-to-house salesmanship, as Fuller Brush men will surely agree, takes a sound belief in oneself. Moreover, those engaged in so rigorous a line of endeavor might be expected to dream of escaping into something more lucrative and less toilsome.

Whatever the workings of the door-to-door merchant's mind, Ranse peddled his way over the Alleghenies, across Ohio and Indiana, and then, through some whim of the merchandising fates, to a farm in the vicinity of Big Foot, Illinois. This was the Douglass farm, where the course of Ranse's life was abruptly altered. He went no farther, lingered instead for romance and friendship. He married Theresa Douglass and made a lifelong friend of her brother, Chris. The importance of this double alliance was foreshadowed in the family's cousin, Stephen A. Douglas, whom only Lincoln could defeat. It may have been the indomitable character of the Douglasses or the single-mindedness of a tin peddler or, more likely, the combination which helped turn a vision into a reality.

At any rate, Shelden and his bride agreed that life in Big Foot had its limits and in 1846 set off for the handiest bonanza land, Michigan's Copper Country. They traveled northward by stage, horseback and canoe, setting foot on copper ground not at the usual lake ports, but on the southeastern part of the peninsula towards the foot of Keweenaw Bay. This was a lonesome country, inhabited only by the tall pines and the shorter Chippewa. There was only an occasional prospector passing from one end of the range to the other to look upon the calm, blue waters of Portage Lake. The centers of mining activity were then clustered together at the two far ends of the range. Between, for a hundred miles, there was only the scenery, and traveling prospectors were far

too intent on reaching their destination to stop for sight-seeing. Therein, Ransom Shelden differed from his fellows.

He and his wife, Theresa, made their way along the shores of Portage Lake, climbed the brow of Quincy Hill, and stood a long time gazing down upon an impressive panorama. Ahead rolled endless, pine-green hills, below glistened a finger of Portage Lake, narrow as a river. Off to the left, as far as they could see, rippling water nestled in the sheltering arm of the hills. Ransom Shelden saw a vision here. Not the exalted dream of a Brigham Young, but a practical, businessman's picture of industry and commerce. He *knew* there was copper in the hills. He saw the miles of water, safely sheltered from the storms of Lake Superior, as the perfect harbor for the broad-beamed lake boats, which would come to carry the metal away. He saw the ingot float off to hungry eastern markets; there would be no waiting for railroad promoters to nerve themselves to the point of running their rails to a back-country like the Keweenaw.

He could clearly see towns springing up beneath Quincy Hill, but he couldn't know that they would grow from a new type of copper rock, whose lifeblood was water. He couldn't see the stamp mills, which depended almost as much on water as on the copper-bearing rock itself. But he did see a great, new flow of people pouring off lake boats which could sail inland on sixty feet of water and dock in a tranquil harbor. He saw easy access to food and coal. Perhaps he saw Boston money traveling on the boats, as well.

Thereafter Shelden conducted himself as though he had seen a schedule of events to come. He built a cabin at Portage Entry on the sand bars which then cut off Portage Lake from Keweenaw Bay. In the front part of his cabin he built shelves, and outside the door he hung a sign announcing that this was "Shelden's Store—General Merchandise."

It was much like erecting a filling station before an automobile road is laid. Almost no schooners touched at Portage Entry, the prospectors preferring to land at Eagle River, Copper Harbor, or other ports on the north side of the Peninsula. Theresa had seen no vision, and she minced no words when she told Ranse he was a plain fool. He answered that he wanted to be ready when the

time came. And sure enough (you might say according to Shelden's schedule) the first steamer ever to sail Lake Superior, the propeller *Independence* called at Portage Entry on her first trip in the spring of 1847. Sixteen prospectors made their precarious way to shore in the ship's boats and were soon throwing down hard money on Shelden's counter for beans and bacon before they set off for the trap range.

Later in the same year, Shelden moved his store to a site which became the village of Houghton, on the south shore of the narrow finger of Portage Lake, across from the eminence of Quincy Hill. Again, Shelden's plans were in advance of his customers, for practically no one except the Chippewa lived on what was called Portage River. His sole trade was made up of that meager trickle of prospectors traveling from one end of the range to the other. But again Ranse was following the plan he had formed. This time it took a little longer to work itself out. Shelden, in fact, had to go out and find the Portage district's amygdaloid lodes before he could attract customers for his store.

Shelden knew absolutely nothing of geology and little more of mineralogy. His search for copper-bearing rock was a blind one and almost as aimless as though he had been blindfolded. He had only his vision to sustain him and the slight assistance he got from his friends the Chippewa. Ranse had turned loose his tin-peddler's charm and salesmanship on the Indians, and they gratefully pointed out prehistoric pits and outcroppings. He turned up a few chunks of solid copper, but more frequently came upon rock shot through with specks of the pure red metal. He might have tossed the stuff aside if he hadn't stumbled upon so much of it.

Here Shelden's natural practicality took charge of his dream. He was finding so much of the copper-pocked rock that it seemed worth mining, if the mining could be done on a large scale. Perhaps, in the long run, quantity production could vie with the concentrated richness of the mass mines.

This amygdaloidal rock, which so impressed Shelden, was not new to the Copper Country; but it had been consistently scorned as too poor to bother with. Now with Ranse and his adjectives doing the exploiting, the amygdaloids came into their own—at

least conversationally. Shelden now spent his time running down visiting capitalists and promoters and deluging them with sales talk on the amygdaloids. As soon as he could gather the price of passage he went "down below" to Detroit, and anyone who was unwise enough to let Ranse get started was treated to a monologue on Portage Lake couched in such glowing terms that the listener thought he was hearing a description of Eden itself. Shelden's unquenchable enthusiasm became one of the Copper Country's favorite jokes. Visitors were warned that Shelden and his hyperbole would get them if they didn't watch out.

The mass barons of the Cliff, Copper Falls, Minesota, and other mines which were producing fortunes in solid copper from the fissure veins, laughed loudest at Shelden's faith in amygdaloidal rock. Imagine opening a paying mine on deposits of 6 per cent rock! Fancy trying to sell shares in a mine working rock which ran only one hundred and twenty pounds of copper to the ton!

But a man who sowed as many seeds of optimism as Shelden did was bound to see a few take root. Success finally sprouted from the barren rock piles of failure. The Ohio & Isle Royale Mining Company spent several years trying to make a profit from working the prehistoric pits on Isle Royale. The directors finally tired of the isle but not of copper mining, and Ranse Shelden and his everlasting adjectives awakened their interest. The company bought some land atop the bluff across the Portage River from Quincy Hill and put down a shaft on one of the two parallel amygdaloid beds which lay there some two hundred feet apart. Shelden's friends the Chippewa had shown him where the beds lay, and Ranse was only too glad to point them out to the promoters.

Thus, early in 1852, the Portage Lake amygdaloid district was opened. In that same year the Minesota paid its first dividend from endless masses of copper. All the range acclaimed the Minesota as the ultimate wonder of wonders and rolled on the floor with laughter at the damn foolishness taking place above Portage Lake. They couldn't know it, but the amygdaloids would keep the Copper Country in groceries when the mass copper from fissure deposits couldn't buy it a frozen whitefish fillet.

By this time Chris Douglass had come north from Big Foot

and was very much a part of the Copper Country scene. But where Shelden was a man of adjectives, Chris, you might say, was a man of verbs. That is, he dealt in action. Ranse lured capital and capitalists with his persuasive tongue, and Chris drew both into a whirlpool of mining activity. Douglass was the first agent of the Isle Royale Mine and had a finger in all parts of the copper range. In fact the four variants of his signature: Christopher, C. Columbus, C. C., and the full Christopher Columbus Douglass turn up in so many early mining reports that you might think the man was actually four brothers.

The real achievement of the brothers-in-law, however, came towards the middle of the 1850's. During this time the two discovered the Pewabic Amygdaloid Lode—the "Old Reliable," which is still being worked—and formed the Pewabic and the Quincy mining companies. They took an important part in forming the Huron Mining Company across Portage Lake, which was to become the Waterloo of Ed Hulbert. But forming three new mining companies was no great accomplishment. The Shelden and Douglass promotions were backed with Boston money! A nameless foundling had been adopted by royalty!

Boston, at last, had approved the Portage Lake District. Win or lose, profit or loss, the amygdaloid lodes of Portage Lake had arrived!

Ransom Shelden saw his vision unfolding according to schedule, and though he and his brother-in-law were instrumental in the opening of the amygdaloid mines, Shelden's first interest still lay in the development of the district. He realized, now, that this new rock must be crushed before the copper sparkles which ran through it could be extracted and collected. The amygdaloids must be milled as well as mined, and the milling would require hundreds of new hands, the mines hundreds of new miners.

Shelden, as usual, was ready for the influx of newcomers, well before they came.

He and Douglass plotted out what became the twin cities of Houghton and Hancock, across the Portage River from each other. The two enthusiasts sold lots and built houses in best modern subdividers' style—a little down and the rest out of your pay check, sir. When there were no more customers, they helped the

illiterate miners write home to Ireland, Cornwall, and Germany telling brothers, fathers, and cousins of the unheard-of opportunities awaiting them on fabulous Portage Lake. Ranse Shelden's extravagant phrases must have translated well into German, Cornish crake, and the dialects of Erin, for "Old Countries" appeared as fast as they could borrow the price of ocean passage.

Soon Ransom Shelden could take his Theresa by the hand and lead her from thriving Shelden Store Number One atop Quincy Hill to Branch Number Two across the river in Houghton. He was a gentleman and never said, "I told you so," but his chest pardonably expanded as he pointed to the pine-board hotel named for her brother and the scrolled sign which marked Houghton's Champs-Elysées as Shelden Street.

There was only one worm in the apple of his eye. The endless stream of lake boats which, according to his schedule, should be sailing into Portage Lake was held up by sand bars that blocked the mouth of the lake at the entry. Shelden persuaded the mine owners that only when the sand bars were removed could the district come into its own. He and Douglass formed the Portage Lake Improvement Company, financed by the mines and their own pocketbooks, and dredged a deep channel through the entry. In November, 1860, the steamer *Illinois*, with 140 tons of freight in her holds, steamed through the entry and into Portage Lake, with twelve feet of water to spare beneath her bottom. They blew the mine whistles that day until there wasn't a pound of steam left in a boiler along the lake. Now the biggest vessels on the Great Lakes, though loaded to their Plimsoll marks, could sail into the finest natural harbor on Superior!

But shortly the boats brought news which Ranse Shelden could hardly have foreseen from the top of Quincy Hill. The East rumbled with the sound and fury of abolition, the voice of secession resounded in the South. The copper market, even then sensitive to general conditions, fell alarmingly. The unproven mining district of Portage Lake was hard hit. Although the amygdaloids were more than promising, working such low-grade rock brought with it unusual problems. Copper mining was still in its adolescence, and practical methods had yet to be worked out. Mining companies were apt to sneer at geologists, and no superintendent

Courtesy Penton Publishing Co.

JOHN HAYS

Courtesy Lewis Publishing Co.

EDWIN J. HULBERT

Keweenaw Historical Society

DOUGLASS HOUGHTON

". . . about this time there were a dozen men who had all ten fingers and some of their toes deep in the Copper Country pie."

F. R. Marsene

The Cliff Mine location as it looks today

was considered worth his salt who couldn't work out his own geological problems. Being human, the mine bosses made mistakes. No great harm was done while the copper market was liberal; but as the market fell there was no margin for bungling.

Already the Copper Country had seen one tragedy, brought on by uncertain conditions. In 1854, with winter approaching, the superintendents of the Albion and Huron mines admitted that the amygdaloid had them temporarily baffled and shut down for the winter. Other Portage Lake mines soon followed suit. And the newly arrived Cornish, Irish, and Germans who had borrowed their last cent to reach the range, were literally out in the cold. The boarding-house keepers couldn't feed so many non-paying customers and regretfully turned them out of doors.

In mid-January, when the northern winter is bitterest, several hundred of these unfortunates set out on foot for Green Bay, more than two hundred miles to the south. Few had any knowledge of woodmanship, for who needed a compass on the Cornish moors? And their clothing hadn't been tailored with a Superior winter in mind. At least five were found frozen when spring thaws uncovered their bodies. No one knows how many the wolves tore to pieces, but only a fraction reached Green Bay.

The turbulence of the North during the first months of the Civil War was magnified in the one-industry Keweenaw. The mines were idle, the miners payless, and the mine owners silent. Grant's victory at Fort Donelson in the spring of 1862 was celebrated with cannons booming and the stamp-mill whistles shrieking, but the miners preferred to look on the debacles of Bull Run as the real straws in the wind. In their eyes, the Union was crumbling, and they acted as though law and order were as oppressive to the rights of man as abolition.

Then the copper market started the upward curve it invariably follows in time of war. The Federal forces needed brass buttons, copper canteens, and bronze cannon. Copper went to thirty, forty, and then fifty cents a pound. It was headed crazily for its all-time high of fifty-five cents! Thirty-cent copper was bonanza copper, and every gopher hole which could produce a pound of the red metal became a mine with the market at forty cents. The Portage Lake district, dreamed up by Ransom Shelden, was now

operating three shifts a day. But unfortunately miner and millhand wages soared with the metal market—their opinion of themselves in proportion.

The same men who had been only too anxious to work for thirty dollars a month a few months before, demanded and got $100. The survivors of the terrible winter escape to Green Bay came back to have their revenge at the expense of the mine owners. They ran Portage Lake to suit themselves, and drinking was no longer the exclusive pastime of Sundays. They took to quitting work on any provocation, sometimes with no provocation except a thirst. The time came when the mines had to shut down in midweek because so many of the underground forces showed up too drunk to climb down the ladders.

The miners at the Pewabic even had a try at revolt after an agitator exhorted them to *arise* during a hard-drinking Sunday afternoon. A mob formed and marched on the Pewabic stamp mill, bent on taking it over and running it to suit themselves. Tom Foster, the superintendent, had other ideas. Together with a few faithful mill hands, the forces of Union pelted the mob with chunks of amygdaloid. The miners, however, were used to having rock fall on their heads and closed in to take the mill. Foster then ran a hose to the mill boilers and turned live steam and scalding water down upon the uprisers. His was the victory, but the unrest of the era had come to the copper range.

Mining officials and their families were soon living in the midst of a continuous riot. Women didn't dare go out at night, and a man kept to the middle of the road, a lantern in one hand and a Colt in the other. Violent death eliminated some of the more exuberant, but no one minded murder amongst miners. It was when marauding bands began breaking into homes that solid citizens resolved that action must be taken. Who but Ransom Shelden, father of this turbulent settlement, should lead the way to law and order? Ranse moved all the supplies from the loft above his grocery, and every night be captained a company of vigilantes and drilled them there in secret. Fortunately, the vigilantes never went into action, and neither Judge Lynch nor the gibbet claimed any victims. Instead, Shelden attempted to solve the matter by invoking the less violent laws of supply and demand.

He called a meeting of the executives of the principal mines of the range, and after he had talked them into agreement a fund of $90,000 was subscribed to back his plan. Agents were then dispatched to the Scandinavian countries, particularly to Sweden. The agents, with glowing promises of high wages, induced four hundred assorted Scandinavians to come to Michigan. All the money went to transport and feed them, and the Norsemen signed a paper promising to repay this collective amount out of their wages.

Now, said Shelden and the mine agents, let a thirsty Mick or Cousin Jack quit work and see how quickly his place would be taken by an imported Swede! Unfortunately, neither he nor the mining officials had gauged the intensity of local patriotism, nor the cross-purpose of local patriots.

The sister towns of Houghton and Hancock were fanatically anxious to show their allegiance to the Union to the rest of Michigan. Already a well equipped overofficered, but undermanned company of light infantry had been formed. The high wages paid at the mines proved a stumbling block to recruiting, so that the citizens raised a fund and offered a bounty of $300 to any man who would enlist. Moreover, it was then possible for a drafted man to hire a substitute, and a hard bargainer could usually get more than $300 from some draftee who considered army life distasteful.

The Scandinavians reached Portage Lake at the peak of this cash-money patriotism. Soldiering looked more attractive than digging copper, and all four hundred Swedes, it is said, joined the Union army. If their consciences bothered them at all, they didn't have to search far for a salve. The cause they had embraced opposed slavery. And what else than bondage was the contract that said they must work out their passage money in the mines?

Today, mining locations still in existence have a group of buildings set off by themselves which are still referred to as Swedetown. These were built to house the Scandinavians who so ungratefully went off to war without ever having set foot in them.

Money was as scarce as miners, once Civil War made its inroads on the country's resources. Credit and cash were held with a tight rein in the East, and gold and silver coinage was hoarded

everywhere. Boston had always shipped enough currency on the last boat of the season to take care of Copper Country pay rolls during the interminable winter. The mines were in the habit of buying winter supplies on long-term credits, paying off these obligations in the spring with copper. But now the supply houses and provisioners asked for cash.

During the first winter of the war there was hardly a dollar cash in all the Copper Country. The mining companies were forced to create some medium of exchange, and issued money of their own—neatly engraved bills hastily sent out from Boston, usually in one-, five-, and ten-dollar denominations. Originally they were intended for trading only at local stores where the store bookkeeper could record figures in lieu of change. But with intertrade between individuals and various mine locations the money soon distributed itself back and forth throughout the length of the range. A piece of "copper money," as it was called, issued by a mine near Copper Harbor might turn up and be accepted by a storekeeper at Ontonagon. Under such a makeshift monetary system it was inevitable that someone should have a try at counterfeiting.

Tommy McGuire didn't get around to it until after the war, in the fall of 1873, but had he used a little more discretion he might have made a killing. The Calumet & Hecla mines had found copper money so convenient that the company continued it long after the wartime emergency was over. McGuire took a sample of this C. & H. scrip to a Milwaukee lithographer and blithely ordered a hundred thousand dollars of it run off. The printers communicated with C. & H. officials, who instructed them to execute McGuire's order. Shortly afterward, McGuire and two accomplices, their pockets loaded with spurious copper money, began "shoving the queer" in the stores and saloons of Red Jacket and Laurium. It was pay day, and the bartenders were far too busy to examine the customers' money. But C. & H. had detectives on hand, and McGuire and his friends were gathered in before they were able to buy more than seventy-five dollars' worth of drinks. The conspirators, however, suffered little more than long confinement while awaiting trial. C. & H. officials were none too certain of their case, for it was possible that they had

been doing some technical counterfeiting on their own in issuing copper money.*

As a matter of fact, the Department of Internal Revenue gave the copper barons the fright of their lives in the early seventies, and copper money was discontinued in a hurry. A new Federal law levied a tax of 10 per cent on certain forms of commercial paper, and ten cents on a dollar was to be collected every time the paper changed hands. When the Internal Revenuers appeared, they said they hadn't come to question the right of a mining corporation to issue its own money. Maybe this was and maybe this wasn't counterfeiting. But that 10 per cent. . . .

The barons of iron to the south had also been issuing "iron money," and they met with the barons of copper to shudder together at the innumerable times a dollar bill changes hands. The tax, if collected, would run into millions. The iron men employed Peter White and the copper men, Jay Hubbell, both leaders in Upper Peninsula and Washington politics, to see what could be done about the matter. It took a great deal of doing. Congress was just about to adjourn when Michigan scrip came before that body, and it was only by setting the clock back twice that White and Hubbell succeeded in settling the affair. Congress agreed that iron and copper money was necessary under an emergency and the tax was thus noncollectible. The metal barons breathed easier again, but iron and copper money had been so widely distributed that time-stained certificates were still being redeemed in 1900.

When Congress made this bow to Michigan's distant Upper Peninsula the copper range was no longer a wilderness but a fat and sassy domain still digesting its wartime profits.

Michigan's copper finger was hardly scratched by the strife which left the South in ashes and most of the North pale with

* Copper money, incidentally, created a neat method for discouraging much-needed labor from leaving the district. The scrip, of course, was worthless "outside," and the companies simply made it as inconvenient as possible to redeem it for United States legal tender. A miner bent on leaving, say, Calumet, traveled fifteen miles to Eagle River to John Senter's store, where he exchanged his scrip for an order on the U. S. Government Agency, eighty-five miles in the opposite direction at Ontonagon. There, with cash in his pocket he waited for a steamer, all the while beset by the temptation of three solid blocks of saloons. The Copper Country was annoyed only slightly by emigration during the days of copper money.

economic anemia. When Lee handed over his sword at Appomattox the Union began a period of reconstruction; the Copper Country, a period of remodeling. Its heritage from the Civil War was the wherewithal to do itself over.

Mines which had proved themselves in the race to get out enough copper for wartime needs settled down to remodel not only their own mining plants but the district itself. Large cities might still be groping their way beneath kerosene street lamps, but Houghton, Hancock, and Ontonagon were having a try at the newfangled electric light. Several years before Detroit could talk with Buffalo over Alexander Bell's magic telephone, the superintendent of the Adventure Mine could curse out the captain on the lowest level without leaving his plushy chair.

Jasper Rand was invited to try out his light, portable air drill at the Isle Royale, now one of many mines prospering on the Portage Lake amygdaloid lodes, and it worked so successfully that the day of the hand drill passed forever. John Collum, a later agent of the Isle Royale, invented his jig on the range. In principle, it is still in use. Tom Evans perfected a slime table for washing free copper, while running the Atlantic stamp mill. That, too, is still in use. Captain Dick Uren designed the first circular rock bin, Bill Frue his invaluable vanner, and Carlos Rawlings his man-engine, while working on the Michigan range. Thomas Ball couldn't get much encouragement elsewhere for his steam-powered stamp, but was welcomed by the Keweenaw superintendents.

A host of other mining improvements appeared during this period, and if they didn't actually originate on Lake Superior, most of them had their "bugs" worked out there. Lake mines, with their war-fattened treasuries, contributed much to the advancement of American mining.

Ransom Shelden saw his Portage Lake district, the youngest settlement on the peninsula, quickly outgrow its older rivals. He was shouldered aside on the Houghton docks by streams of arriving passengers. Ex-soldiers, blue and gray, poured off the lake steamers to seek peace and a job in this untroubled oasis. Children toddled down the gangplanks, for now whole families were coming in to swell the growing population of Portage Lake.

Shelden delighted in giving directions to the new arrivals, but more and more he was unable to do so. How could he answer questions voiced in Swedish, Polish, or Italian?

But the bustle and activity Shelden had done so much to create was even then pointing in a new direction. The amygdaloids had drawn not merely crowds but settlers to the lake ports of Houghton and Hancock. Now they were moving inland to work still another kind of copper rock.

CHAPTER XII

BILLY ROYAL'S PIGS

As ALL READERS of vigorous western fiction will assure you, no bonanza mine can possibly be discovered under any but the most melodramatic circumstances. Furthermore, by the authority of long-standing tradition, all mining melodramas have two standard characters as co-heroes. They're as fixed and as thoroughly American as the handlebar mustachios of an "East Lynne" villain.

Our Number One Hero is, of course, the prospector. If he plays his role in character, he must stagger into a boom-town saloon, half starved and more than a little crazy. In a voice hoarse with disuse and alkali dust, he demands a drink. Then after a respectful quiet has settled on the bar flies and gamblers, the prospector pushes aside his matted beard and croaks: "I've struck it rich at last, boys, I've made the *big strike.*"

Hero Number Two is not quite as human as his colleague, though the distance between the human qualities of the two is obviously slight. This supporting actor is traditionally a beast or fowl—has been a gopher, a coyote, a prairie dog, and even a rooster. The business of the animal actor is to scratch away or otherwise disturb the earth's surface in such a manner that the prospector finds the outcropping of his *lucky strike.*

With American mining tradition so firmly fixed, it is not surprising that, when the time came to discover the greatest copper bonanza of all time, Fate saw to it that both colorful prospector and animal assistants were cast in their proper roles. But the mining fates were evidently in an impish mood at the time. The prospector in this case is a most original character; indeed, his like had never been seen before. And where a single animal scout might do for the story of ordinary mines, the tale of the discovery of the fabulous Calumet Conglomerate involves not one, lone, rooting hog, but fittingly includes a whole herd of pigs.

Edwin James Hulbert (he liked to put down all three) is the prospector of this saga. He was probably the most unlikely candidate for heroship in all mining annals—fiction or nonfiction. Instead of croaking out his words like the traditional prospector, Ed's rich baritone was in great demand when he first came to the Copper Country along about 1846. The few ladies living in the rough country had him over for Sunday supper and afterwards accompanied him on the reed organ as he melodiously rendered such tender ballads of the day as "Rosalie, the Prairie Flower" or "Ben Bolt." Ed, in fact, furnished what was perhaps the sole elevating influence of the boom-time Keweenaw. Listening to his polished conversation, sparkling with Shakespearean and classical allusions, his ready if somewhat heavy-handed wit, the matrons could easily imagine themselves back in the refinement of a Detroit parlor.

Even the most circumspect mining man's lady found herself growing a wee bit sentimental as Ed sang "Drink to Me Only with Thine Eyes." Her heart fluttered more than a little as she looked at Ed's wavy chestnut hair, his six feet of young-manly slimness, and his city-cut broadcloth suit. And Ed's hazel eyes, it is said, were as soul-stirring as his rich baritone.

This handsome lad, only nineteen at the time, had what was known in those days as "all the advantages." His father was a substantial Detroit businessman who had come north with several associates to open the property on the south range which later became the immensely rich Minesota Mine. Ed had been educated in Detroit schools and graduated from what became the University of Michigan with a degree corresponding to one in Civil Engineering today.

His uncle was Henry Schoolcraft, the United States Indian Agent on the Upper Peninsula and highly influential along Lake Superior at the time. With so solid a background, it is not surprising to find Ed Hulbert afflicted with a malady common to college graduates from time immemorial.

He sincerely believed that his sheepskin guaranteed a vice presidency in any business within a few months of commencement. In his bright lexicon he saw no necessity for learning the tiresome rudiments of mining. His diploma would certainly be enough

to make him a mining princeling immediately—shortly a copper king.

Like many a college graduate, Ed was greatly disappointed in his first Copper Country jobs though, by any standards other than his, they were good ones. He knew his level and transit and had no trouble getting surveying assignments at the North American, Copper Falls, and Cliff mines. At the Cliff, he was put in charge of sinking the famous vertical shaft which brought in the first dividend payer in the Keweenaw. He worked at similar tasks on the South Range in the Iron River district. These, however, he considered as only the lowest rungs on the ladder to a copper kingdom; and he felt he was wasting time on them.

In 1853, when Ed was barely past voting age, his rapidly flagging hopes took a spurt upwards. Near the forks of Eagle River he found a strange chunk of rock lying on the surface of the ground. It was made up of pebbles, gravel, and sand, all cemented together with the dull red of native copper. Ed's schooling told him it was a piece of conglomerate, a mineral which looks exactly like what its name suggests.

He hurried to the town of Eagle River and naïvely showed his find around the village, boasting to all who would listen that he was on the verge of a fortune. The barroom experts admitted that it was pretty rich-looking rock but assured Ed that conglomerate was only a freak. The sages among them, who had been around, said they had seen similar copper rock in the Ural Mountains of Russia. The Cousin Jacks present said they had occasionally found conglomerate in Cornwall. But none of them had ever heard of its being found in paying quantities.

"Pudding stone," said the Cousin Jacks, "be a brave and handsome ore, but there bain't enough of it in the whole world to keep one man in baccy."

The gibes of the experts infuriated Ed. He spent all of his spare time searching for the source of his precious conglomerate. Nothing, however, came of his frantic searching, and, smarting from failure, he agreed to travel to New York City with his friend, John Simpkins. John convinced him that selling mining shares promised a quicker road to fortune than copper mining. The two sailed to Sault Ste. Marie on their way East, and while they were

waiting for passage down Lake Huron, Ed wondered if his decision hadn't been a litttle hasty. He was sure it had, when his friend Lieutenant John Booth of the mineral agency offered him a job copying land maps.

"I'm not going East," he told Simpkins. "The copper range owes me a living, and I'm going to stay and claim it."

Now, Ed was by no means a prissy lady's man who belonged back in Detroit at a ribbon counter. He could run a section line with the best, and his past employers had only good to say of him. They might smile at his callow self-confidence, but they recognized his quick, lively intelligence. Furthermore, where Ed's manly charm aroused the mother instinct in the mining men's ladies, it awakened a paternal interest in their hard-boiled husbands. Ed, in fact, was the protégé type. Older men saw in him a fine youth who would do them proud as soon as he got his feet on the ground. And, fortunately for Ed, once he returned from the Sault to the Keweenaw, he met up with some of the most important men on the copper range.

About this time there were a dozen or so men who had all ten fingers and some of their toes deep in the Copper Country pie. Among them were Sam Hill, Chris Douglass, and his brother-in-law Ranse Shelden, Cy Mendenhall, and Bill Frue. These were great names in early mining operation; these were the men eastern capitalists looked up the minute they landed at Copper Harbor, Eagle Harbor, or Portage Lake. Some were more successful than others, all had their ups and downs, and many died deadbroke. In their day, however, the name of one or another appeared on every mine report that came out of the Keweenaw. And, of them all, the most familiar name was that of Samuel W. Hill.

The biography of Sam Hill is a story in itself. He was one of the few characters in the Copper Country who lived and acted as a mining man is popularly pictured. His speech was so blasphemous and obscenely colorful that Keweenaw people still insist that his name was the original of the time-honored synonym for profanity. Certainly, his outlook, social qualities, and conversation were diametrically opposite to those of young Ed Hulbert.

Nevertheless, the two became firm friends. Sam acted as a combined father-confessor, teacher, and mentor to Ed, while Ed

in turn adopted the role of the brilliant young protégé. Sam shared the tutelage of the young surveyor with Bill Stevens, another wise old-timer. The two taught Ed all they knew about geology, mineralogy, and mining engineering—which was considerable. Ed was a willing and intelligent pupil, and by the time his tutoring was completed he was ready to bid for his share of the Copper Country pie along with the best of them.

Unfortunately, the two sponsors, enamoured of their promising pupil, gave him an object lesson in high finance at a time when it was too heady a wine for Ed's tender years. They took him in on the Military Road deal, and Ed, whose self-confidence had returned to full flower, mistakenly concluded that he was fitted to become a captain of finance as well as a king of copper.

Towards the end of the fifties, the Federal Government awarded contracts to build a road along the copper range. As was only to be expected, an influential man like Sam Hill had no trouble getting a fat share of this governmental plum; a group headed by Sam and including Ed Hulbert, Bill Stevens, and Amos Scott secured contracts to build most of the so-called Military Road running between Copper Harbor and Portage Lake. Payment was made in land—four sections, each a mile square, for every mile of road constructed.

The beauty of this arrangement was that the government allowed free rein in the selection of the land, stipulating only that it be located within six miles of the Military Road. Quite naturally, Sam Hill and his cronies chose parcels which showed promise of mineral richness. If a particularly choice plot happened to be outside of the six-mile limit, they simply turned the road until it ran within six miles of the land. The Military Road, as a consequence, wound its way along the range like a snake in full flight.

Sam, Ed, and the rest did handsomely for themselves on the deal. Ed sold some of his share of the land, and his money belt bulged with cash. He also retained title to a good deal of mineral land. Typically, he took his sudden prosperity as his just due, forgetting that Sam Hill had engineered the transaction.

By now Ed Hulbert knew all that his mentors could teach him. He had gained the self-assurance it takes to look visiting capi-

talists in the eye and ask for $50,000 for development work without so much as a "Please." And his reputation had now progressed to the point where he was made a mine superintendent.

His elevation to this position came in 1858. In the course of surveying the tortuous Military Road, Hulbert had come across another piece of conglomerate. This time it was a chunk of several tons, half hidden in dense undergrowth and covered with moss and lichens. He sensibly kept the actual location of the big rock to himself but chipped off a number of specimen pieces and showed them to his old friend Bill Stevens. Bill examined them and immediately took Ed over to Eagle River to meet two Boston promoters, Horatio Bigelow and Joseph W. Clarke, who were on the Keweenaw inspecting their mining properties.

Again Ed said nothing about the big chunk, claiming he had found the specimens scattered about the surface over a wide area. The Bostonians were impressed and suggested that Ed superintend the exploration of some property they owned. Perhaps, they said, he might find the source of those specimens beneath their land. They formed the Allouez Mining Company with Ed at its head and, though nothing much came of it, the job kept Hulbert in the vicinity of his big chunk of conglomerate for several months. He spent as much time exploring the terrain adjacent to the big rock as he did on the Allouez property.

Right here, Ed Hulbert, or at least his biography, becomes entangled with a herd of pigs. He denied this entanglement all the rest of his life; but then he denied a good many things, and, fact or fancy, the story of the pigs simply will not down.

As the tale runs, a jovial Irishman named Billy Royal who kept a combination saloon and hotel at a point halfway between the Cliff Mine and Portage Lake, was responsible for Ed's adventure with pigs. Billy, nearly as round as he was tall, had a colossal inertia and was chief contender for the title of the laziest man on the Keweenaw. It is said that his bar was run cafeteria style as he was too lazy to serve drinks or make change. The sleeping quarters upstairs in his Half Way House gave further evidence of the Royal lethargy. There were no beds, the guests being expected to sleep upon the floor. And the dormitory was strewn with specimens of rock left behind by prospectors. A night at

Billy Royal's inn, it is recalled, was like a siesta in a stone quarry.

Billy could be aroused from his customary languor only by the most urgent necessity. So it was only natural that Ed Hulbert, riding past Half Way House on horseback and seeing Royal standing in the middle of the road, should stop to inquire if anything was wrong.

"Them son-of-a-bitching hogs is gone again, and they been gone for days," Royal is reported to have told Hulbert. "Ed, how about helping me look for them?"

The Copper Country, then as now, was a neighborly land, and the two began searching the countryside. It was to be expected that Hulbert, with a college education and a fine ear for music, should be the first to hear a faint squealing in the distance. He called to Billy, and the two followed the squeals to a clump of bushes, in the middle of which stood two age-old trees, a stately hemlock and a tall, black birch. In the midst of the undergrowth and between the two trees, they found a pit ten or twelve feet in diameter. Entombed below, they saw the entire herd of pigs squealing with hunger.

For eighty years, just what happened after this has been the subject of endless and always indecisive argument. The boys who frequented the bar at the Douglass House in Houghton, an oasis Hulbert later called "a brooding place of human vipers," said that Ed found a twenty-ton chunk of conglomerate at the bottom of the pig's pit. It was this chunk, they insisted, which convinced Ed that he had found the great conglomerate bed.

Hulbert always denied this, contending that he located the lode by strictly scientific methods. The pit and the pigs, he claimed, had no connection whatsoever with his discovery. There is no denying, however, that the Number One shaft of the Hecla Mine was put down from the bottom of the pit, and millions of pounds of copper have been hoisted from it.

In all probability, the real reason the pit and the pigs are entangled with the story of Calumet conglomerate was the discovery Ed made once he had cleared the pit of the twigs, earth, and rubbish which the years had washed into it. At the bottom he found stone hammers, tools, copper artifacts, strips of tanned deer-

skin and some birch-bark "mococks," or carrying baskets. Just beneath these was twenty tons of green copper carbonate—fifty barrels of it. All were undoubtedly possessions of that ubiquitous race of prehistoric copper miners whose operations had led to the discovery of the fabulous Minesota Mine. This pit, however, proved to be merely a cache where the ancient miners stored their materials and copper over the winter. Further explorations proved they had done no actual mining there.

Whether or not Ed found any conglomerate in the pit is certainly not worth the eighty years of argument. The important point is that about the time he is supposed to have made his discovery, he unstrapped his money belt and sent a Chippewa named Springwalk hurrying off to the Sault on snowshoes. Acting under Hulbert's instructions, the Indian purchased about two thousand acres (no one agrees to the exact amount, and Hulbert's own account contradicts itself) in Ed's name. This land was made up of many parcels, varying in size and not all contiguous to one another. But it did not include the site of the pit.

Now Ed found himself in the position of many a prospector. He owned many acres of what was to become some of the richest mineral land in the world. But he had no money to open a mine. Worse, the Civil War had just begun, and money was tight. The price of copper was falling, and most of the mines along the range shut down. The outlook was so hopeless that Ed went "down below" and applied for a commission in the Union Army as an engineer. He was turned down and returned to the Copper Country, where he took a temporary job laying out the surface plant of the projected Carp Lake Mine.

Ed spent as much time as possible exploring his property singlehanded. He was positive, now, that a very valuable lode ran somewhere beneath it. As war demanded more and more copper, and money was easier, Ed's hopes revived. His friends of the Allouez, the Bostonians Horatio Bigelow and J. W. Clarke, now listened to his enthusiastic predictions. They put up some money to form the Hulbert Mining Company, and Ed deeded over his land to the new corporation. John Hulbert, Ed's brother, and his old friend Amos Scott of the Military Road deal were put in charge. Exploration was begun in earnest.

On September 17, 1864, the great Calumet conglomerate lode was uncovered. Flushed with this success, the group formed the Calumet Mining Company this same year to open another part of the property Ed had purchased.

Ed, as you will remember, had been unable to purchase the land which included the site of the ancient miner's pit. This parcel belonged to the St. Mary's Mineral Land Company, which had received it in payment for digging the Sault Canal. The ambitious Ed felt certain that the conglomerate bed traversed this property and couldn't rest until it too was acquired. Thereupon, still another company was formed, the Hecla Mining Company, and Section 23, which included the pit site, was purchased for $60,000.

Now Ed was the fair-haired boy of the Copper Country. Still in his early thirties, the young protégé of Sam Hill and Bill Stevens promised to overshadow even his sponsors. He was on the verge of his coveted copper baronetcy.

As the makings of a baron, Ed held a third of the shares in the Hecla Mining Company, a fourth interest in the Hulbert Mining Company and was soon in the midst of engineering a deal which gave him better than half, or controlling interest, in the Calumet Mining Company. Ed was rapidly gaining a handsome reputation in Boston, too. The first barrels of conglomerate shipped East created an excited flurry on the Boston Stock Exchange. The shares of Calumet, which originally had sold for a dollar, rose to seventy-five dollars each, once the speculators had had a look at the specimens.

Now a copper mining property, no matter how rich it promises to be, still remains a prospect until it is developed. Considerable money must be spent in building a surface plant, and a costly shaft must be sunk and equipped. While Ed had most of the qualifications of a copper king he still lacked the all-important royal treasury. He was rich only in promise, land, and mining shares.

During this period, Hulbert was earning his bread and butter as superintendent of the Huron Mines, the president of which was that astute Boston blue-blood Quincy Adams Shaw. At the time, the future of the Huron looked rosy, and under Ed's genuinely able management the property seemed a sure bonanza. While Shaw had previously visited the Copper Country, inspecting various

properties in which he was interested, his path and Hulbert's had never actually crossed; but after Ed took over the superintendency of the Huron the two struck up a friendship by correspondence. Once Ed realized his chances for developing his three mining companies were negligible without ready cash, it was natural that he should turn to Shaw for help.

Quincy Adams Shaw, as his name suggests, was a high-caste, Back Bay Brahmin, whose lineage dated back practically forever. A forebear of his had been the first American to enter and trade with the natives of Canton, China; and though still in his twenties this early Shaw had cleared $30,000 net profit from his enterprise. Later Shaws increased the family fortune in dry goods. And neither the ancestral fortune nor the Shaw heritage of Yankee shrewdness was lost on Quincy Adams.

Once Ed determined to make the trip to Boston, he had no trouble securing a letter from every mining man whose name carried weight and even testimony of character from a local Methodist minister. Armed with these and his carpetbag, he set off for the long journey eastward to the Hub. Quin Shaw met him at the old South Station and took him on a tour of the even then ancient city. The two rode in a fine carriage drawn by a span of prancing bays. As they drove down Beacon Street and along the Common, passing ladies couldn't help turning and admiring such a dashing turnout. Everyone knew Quin Shaw, of course, but who was the tall, attractive young man with him?

The unattached maidens of well born Boston were soon to know, for a few evenings later they were introduced, with hearts aflutter, to the wavy-haired, hazel-eyed Ed, at a party Shaw gave especially for him. In spite of Ed's classical education and his rich baritone he found waltzing with the cream of Boston a sore trial to his equanimity. Try as he would, he couldn't recall a single quotation from Shakespeare. His shyness and reserve, however, were considered becoming modesty. The Boston ladies put him down as a strong, silent mining man from the strange, wild Copper Country that Father and Grandfather were always talking about.

Ed Hulbert and Quin Shaw got on just as famously. Here is a young fellow with energy and vision as well as knowledge of copper mining, thought Shaw. Quin's a man with money, family

connections, and a financier, thought Ed. The net result of this beautiful friendship was several-sided.

Possibly, its effect on Ed's history is the most important. He borrowed $16,800 in cash from Quincy Adams Shaw and apparently gave only his personal note as security. At the same time, he and Shaw made a deal with the Calumet stockholders to lease the property and work it as partners.

Once the lease was signed, Hulbert returned to the Copper Country ready at last to claim his kingdom. He left behind an enthusiastic Quin Shaw, who was just as eager for mining titles. Shaw immediately bought up as many shares in the Hecla Mining Company as he could afford and soon reached the point where he controlled two-thirds of the stock in that corporation. He was, as the brokers say, bullish on Michigan copper and he became one of the most persistent mining-share salesmen of the day.

Shaw lived, breathed, and talked incessantly of the Hecla, Calumet, and Hulbert mining companies. "You'll make your everlasting fortune in them," he assured friends in his clipped Yankee tones.

The list of names of those to whom Shaw succeeded in selling stock in what eventually became the Calumet & Hecla Consolidated Copper Company read like the passenger list of the *Mayflower*. It was the officers roster of the Continental Army combined with the roll call of the embattled farmers who stood and resisted the Redcoats at Concord. What if there still lingered the faint odor of sharp Yankee trading, whale oil and cod, even a trace of piracy and slave trading? Calumet & Hecla was developed with the money of the first families of America.

While Quincy Adams Shaw was busy raising more and more money in Boston, Edwin James Hulbert was just as busy spending it back in the Keweenaw. With one hand he continued to run the affairs of the Huron, and with the other he was directing the opening of the conglomerate beds, simultaneously on the Hecla and the Calumet properties. He felt every inch a copper king.

CHAPTER XIII

COPPER WITH A BROAD "A"

THE COPPER RANGE was ready to accept Ed Hulbert at his own valuation when he stepped off the boat with Quin Shaw, so to speak, in his left vest pocket. He was automatically elevated to the status of a tycoon, now that he had secured the Boston backing that had made so many Copper Country mines.

The priceless story of the pit and the pigs was put aside for tales of *Mister* Hulbert's shrewd dealings with shrewd Yankees. Important citizens stopped him on Shelden Street to ask his opinions on the mining share market. Friends and acquaintances noticed that his bearing grew lordlier day by day; but if it annoyed them they never said so. Hulbert divided his time between the Huron Mine and the now busy Hecla and Calumet properties. He issued orders to straw bosses, underlings, and even his brother John, like a monarch of all he surveyed. Mere operating detail, he no longer considered worthy of his notice.

But this happy interlude was short-lived. A few months after Hulbert's return from Boston, the Huron Mine tottered, then came down with a crash. The Huron rock was not nearly as rich as it had seemed in the beginning, and the day came when the creditors suddenly descended upon the company in a body.

Ed, later, termed his connection with the Huron "the fatal step of my life." His actual involvement in the mine's financial affairs has never been made clear. It is certain, however, that the bankruptcy of the Huron was a serious blow. Some say Ed impulsively put up all his Calumet Mining Company shares in a foolhardy attempt to save the already hopeless Huron. He stated later that he lent his Calumet stock to Quincy Shaw so that Shaw could borrow money to save the Huron. Dark hints still persist that Ed was robbed in this latter transaction. Whatever the truth of the matter, Ed Hulbert lost most of his 10,833 shares of Calumet when

the Huron collapsed. At the same time, he seems to have lost both his engineering judgment and his good common sense.

Now Hulbert devoted all his energies to developing the Hecla and Calumet properties. He went to work with vim and vigor. His methods, however, were most extraordinary.

He ordered his miners to dig away the soil and glacial overburden which had covered the conglomerate bed for untold ages. A large area of the reddish pudding stone was soon exposed. Then, unaccountably, he began to quarry out the conglomerate rock just as though he was operating huge gravel pits. As the pits grew wider and the excavations deeper, the rain and surface water washed in sand, dirt and debris. After a heavy rain, the pits filled with water, and operations were held up for days until they could be pumped dry.

What kind of mining was this, the Copper Country wanted to know? Ed Hulbert, a mining engineer with experience gained at a dozen mines, should surely know this was no way to mine copper. The right way was to sink a shaft on your lode. Your miners were let down, and they drove drifts or tunnels from the shaft and then stoped out the copper-bearing rock. Seeping water drained into the shaft and collected at the bottom, where it could be baled or pumped out so that you could keep your working levels dry. If you did things this way, your mine could go on down indefinitely as long as the lode held out. Everyone, including Hulbert, knew this. Yet here he was going about things as if he had never seen copper mined before.

If Ed Hulbert used his head at all during this period, his thinking must have been limited to the idea of inflating his remaining interest in the Calumet, Hecla, and Hulbert mines. Possibly he recalled the sudden rise of Calumet stock a few years before, when its price went from $1 to $75 a share after the first specimens of Calumet conglomerate had been shown around the Boston financial centers. It may be that Ed had in mind creating another flurry on the Boston Stock Exchange by getting out a lot of rock in a hurry. When the news of this splendid production reached the East, up would go the market price of shares in Hecla, Calumet, and Hulbert. Then, he could sell off some of his shares at the inflated price and so recoup losses suffered in the Huron crash.

Past this, mining men have never been able to account for Ed Hulbert's peculiar mining methods.

If this was his purpose, it proved futile. When Quincy Shaw and his fellow investors added up cost sheets, they found that Hulbert was spending a great deal of money with little copper to show for it. It was true that Ed had succeeded in accumulating large quantities of the rich conglomerate rock in stock piles, but he was getting nowhere with milling and smelting it. Rich as the red pudding stone might be, obviously it would bring no cash into the company treasury until it was converted into copper ingot. Yet all the while Hulbert contradicted the bleak figures of the cost sheets with optimistic letters to Quin Shaw.

Shaw could hardly miss the discrepancy. However, he took no action until Ed wrote asking that the stockholders be assessed $5 per share and then, a month later, requested that another assessment be levied. Until then, Quincy Shaw had paid little attention to the stories which filtered back to Boston concerning Ed Hulbert's eccentric mining methods. Now he had a talk with his brother-in-law, Alexander Agassiz.

He was in a devil of a muddle, Shaw told the younger man, unable to get the unvarnished truth out of Hulbert and unwilling to accept the verdict of the cost sheets without an explanation. Agassiz, who had already demonstrated his executive ability in righting the tangled affairs of Shaw's Pennsylvania coal mines, agreed to set off for Michigan and attempt to do the same for his brother-in-law's copper interests. His reasons for making the trip, and his later acceptance of even further responsibilities in the Copper Country, are probably the most unique in all mining annals.

As the story goes, just as Agassiz was leaving Boston, he met a classmate, Charles Eliot, who later became a famous president of Harvard University. "Charlie," he said matter-of-factly, "I'm going to Michigan to make money. Then I'll be a naturalist and help my father at the Museum. It is impossible to be a productive naturalist in this country without money."

As you will suspect, Alexander Agassiz was no ordinary individual. The son of the renowned naturalist Louis Agassiz, he was born in Switzerland about the time his father was making his

reputation. He grew up in the universities of Europe as his father moved the family from one institution of learning to another. Alex was still in his teens when the elder Agassiz was induced to come to Cambridge to lecture at Harvard. Literary and intellectual New England was in full flower at the time, and the best minds of the era regularly took tea at the Agassiz home. Transcendentalism was flourishing, and its leaders, among them Ralph Waldo Emerson, called frequently. Oliver Wendell Holmes, Nathaniel Hawthorne, and Henry Wadsworth Longfellow * were others who made up Alex's American background.

Agassiz's younger friends came from families equally well known. He and his sister attended parties at the homes of the Lowells and Cabots and other high-borns—afterward reputedly on speaking terms with God. At college, he was taken into the most exclusive social clubs.

No wonder western copper men later scoffed, in unison: "What a hell of a bringing up for a mine boss!"

Why, Bill Greene was a no-good, drunken cowpuncher for forty years before he brought in Cananea Copper down in old Mexico. Marcus Daly started out to develop Anaconda Copper without much more than his Irish brogue. Dan Jackling was an orphan who came up the hard way to put together Utah Copper. Meyer Guggenheim? Why, he scraped together a living as a pack peddler years before anyone ever heard of Kennecott Copper in Alaska.

So it was fortunate for "Swiss," as his Harvard classmates affectionately called the thick-brogued Alex, that his father had no respect for money. Louis Agassiz once turned down the offer of an extremely lucrative lecture tour with the reply, "I can't afford to waste time making money."

Moreover, the father was given to purchasing stuffed owls and zoological specimens with the rent and grocery money. The state

* On the occasion of Louis Agassiz's fiftieth birthday, Longfellow wrote a verse in commemoration. One stanza in which the poet quoted "Nature, the old nurse," amounted to a prophecy for Alex:

"Come, wander with me," she said,
"Into regions yet untrod;
And read what is still unread
In the manuscripts of God."

of the Agassiz family fortunes reached a point where Alex had to go to work. And since his sister had married the mine-owning Quincy Shaw, it was only natural that Alex should first exhibit his amazing gift for management in the supervision of his brother-in-law's properties.

Agassiz traveled to the Keweenaw during the summer of 1866, making the last leg of the journey on the steamer *Mineral Rock*. The other passengers may have well wondered at this chunky, serious-faced young man who kept entirely to himself reading books with the dullest of titles. He was never seen at the ship's bar; and instead of laughing at the antics of drunken miners staggering around the deck he looked up from his reading with annoyance. When the "old *Rock*" finally docked at Houghton, Alex said farewell to no one, for he had made no friends to bid goodbye.

Ed Hulbert had already learned by letter of Agassiz's coming, and despite the unmistakable purpose of the visit he had the graciousness to come down to the docks and meet young Alex. It would hardly be accurate to say that the two widely differing personalities clashed immediately. Ed, suspicious and on his guard, was studiously polite, listened rather than talked. This was no time to turn loose the force of his famous charm.

It didn't take Agassiz long to size up the situation. Any fool could see that Ed's methods of quarrying out the conglomerate were getting the company nowhere. And any barroom loafer could tell the trouble Ed was having in trying to mill the flinty pudding stone.

The Calumet conglomerate was tougher and harder than any rock ever taken out of the district. The only available stamps for custom milling were of the gravity, Cornish style; and, while they worked well enough on the softer amygdaloid, the conglomerate had to be run through time and again before it was pulverized. This repetitious process was expensive, though not much more so than the cost of hauling the rock to the mills. Alex found that Ed had purchased a hundred teams of horses (horseflesh was still a precious commodity in the Copper Country) and was hauling the conglomerate by wagon over thirteen miles of hub-deep, mud road. After he had seen these and other instances of mismanagement, he

couldn't help concluding that either Hulbert had become a myopic fool or his letters to Shaw were deliberate misrepresentation.

Agassiz made no comment to Ed Hulbert upon leaving the Copper Country. It is unlikely that any was necessary. His innumerable questions had been too pertinent, and their very nature indicated all too well how quickly he had grasped Hulbert's shortcomings. As they solemnly shook hands, Ed had an uneasy realization that he had come up against a born mining executive, the like of whom he'd never met before.

You may be sure Quin Shaw heard all the details of the situation in Michigan and the inadequacies of his partner in the Calumet Mining Company. And there was no doubt about his reaction. He promptly appointed Agassiz treasurer of both the Hecla and the Calumet company, with instructions to keep a tight rein on the purse strings.

At this point our story again becomes entangled in seventy-five years of controversy. The truth of it has been disputed as violently as the happier story of Billy Royal's pigs. It is probable that Shaw decided to bide his time until January, 1867, when the joint lease he and Hulbert held with Calumet shareholders, expired. He would give Hulbert plenty of rope, and if Ed chose to hang himself that was his own affair.

In view of Shaw's investment he can hardly be criticized for his attitude. Agassiz, in a letter from the Keweenaw, wrote: "Calumet is capable of producing copper at exactly *one third* the price at which the most successful mines have ever been able to work—the value of both the Hecla and Calumet are beyond the wildest dreams of copper men."

In the meantime Hulbert, chastened by Agassiz's inspection trip, wrote promising to erect a mill at once, thus eliminating the cost of hauling and the milling fees. But here again he demonstrated unacountable muddleheadedness. A man with his experience should have known that the tough conglomerate which resisted the pounding of the heavy Cornish stamp shoes could not be crushed in a roller mill. Nevertheless, Hulbert purchased a roller mill from the defunct Huron Mine!

When Agassiz returned to the Keweenaw in December, 1866, he found things much as he had left them months before. Ed hadn't put so much as a nut to the bolts of the roller mill, nor had he

made any attempt to build a dam to impound water for it. Instead, he blithely pointed to a beavers' dam, announcing that it would be sufficient to supply the mill. Agassiz, confronted with these and other evidences of Hulbert's seeming willfulness, was unable to curb his temper. And Ed's simmering resentment burst into flame. It is said that he made a few suggestions as to Agassiz's ancestry and legitimacy, which Alex was never able to forget. The showdown had come.

Ed used up a lot of rope in the Copper Country, but he hung himself in Boston. Following his violent quarrel with Agassiz, he went East and, without knocking or removing his hat, pushed his way into Quin Shaw's office some time in January, 1867.

"I'm here for a showdown," Hulbert blustered. "Either I'm going to run those mines, or I'm not. The peninsula isn't big enough for me and that brother-in-law of yours."

"But, Ed," soothed Shaw, "things haven't been going well, and you've spent a lot of other people's money."

"Hard luck," said Ed, "just hard luck. But don't you forget for a minute you and I are partners in the Calumet property, and I'm an important stockholder."

" 'Were' would be a more accurate word, Ed," Shaw replied calmly. "Remember, our lease is up this month. And, by the way, I've been thinking of that promissory note of yours. I could use that $16,800. I'm afraid I'll have to ask you to take it up, right away!"

The rest of this conference, in fact most of it, is lost to history. But there is little question that Ed Hulbert left Boston an ex-superintendent of mines and an ex-stockholder in the Hecla, Calumet, and Hulbert mining companies. All he retained of his glory was the distinction of being the discoverer of one of the richest copper deposits of all time. His foresight in buying up the mineral lands which were to create the Calumet & Hecla Mining Company was soon forgotten. Whenever Hulbert again spoke of Quincy Adams Shaw he used harsh adjectives, like "dishonest," "treacherous," and "swindling." But to little avail. Edwin James Hulbert was through. He never would become a copper king!

Boston management came to the Calumet conglomerate on the first steamer which dared the voyage on the ice-choked lake early

in the spring of 1867. Aboard were Alexander Agassiz, his young wife, and their two infant sons. Agassiz, now superintendent of both the Hecla and Calumet properties, settled his family on the Keweenaw for two long, frozen winters, two blue and pine-scented summers. Shaw had given him full authority! He was to run the mines as he saw fit; to try to bring order and, it was hoped, profit from Hulbert's legacy of disorder.

Agassiz worked sixteen, eighteen, sometimes twenty-four hours a day in setting things to right. He set up the roller mill Hulbert had so foolishly purchased only to see it jam up as fast as the mill hands could clear it. Moreover, Agassiz's efficient soul rebelled at the piddling stream of rock carried from the mines by tiny donkey carts. He ordered both the mill and the donkeys junked, demonstrating what he meant when he said, "I'll have no haywire around any mine I run." Soon Agassiz, who believed in spending money to make money, was building a genuine stamp mill on the shores of Torch Lake, five miles away from the mines.

Another superintendent might have resorted to makeshift in bridging this seven-mile gap. But not Agassiz! He planned to build a railroad, laid miles of rails, ordered rock cars and a locomotive. Shaw, though aghast at his brother-in-law's expensive ideas, was game enough to back them. But money didn't end Alex's troubles. A trusted underling made an error in ordering the locomotive. When the engine, the "Fluke," arrived, it was found that the distance between its drive wheels didn't match the wheels of the rock cars or the space between the already laid rails. Costly weeks elapsed before the rail could be relaid and the axles of the rock cars shortened.

Then Agassiz was forced to war with Ed Hulbert's faithful followers. A good many Copper Country people believed Boston had done Ed exceedingly wrong, and few of them had any liking for the stern young Harvard man who had no time for barroom sociabilities. This resentment flared into direct action, just after midnight during the summer of Alex's first year on the Keweenaw.

A group, said to have been led by John Hulbert, cut the new dam which impounded water for Agassiz's stamp mill. And next morning, appearing before a sympathetic judge, they obtained an injunction to prevent repairs, on the trumped-up ground that the

dam was insecure anyway. The indomitable Alex, however, had a crew at work repairing the dam at the first flicker of daylight and it was completed before the injunction could be served. Defeated in these efforts, John Hulbert, it is said, attempted to cause labor troubles but with little success.

The work of transforming the huge open pits from quarries into practical mining plants was an enormous and expensive job. During one period all mining activities on the Hecla and Calumet locations were stopped entirely while $10,000 a month left the treasury without a cent coming in. In fact, it needed all of Agassiz's untiring energies and nearly two years of constant labor to whip things into a semblance of what Agassiz called efficient operation. Success finally came in 1868. During August of that year, the Hecla produced 185 tons of ingot copper and the Calumet Mine, 140 tons.

At this the copper range gave him a grudging, left-handed compliment when it punned, "What if he does pronounce 'copper' with a broad *a*? That Agassiz knows mining."

All the while, back in Boston, Quincy Adams Shaw was doing the impossible in raising more and more money, to see his brother-in-law through. Shaw's financial gymnastics were as incredible as Alex's trouble juggling. He had lost heavily in the Huron crash, and, what with buying up more and more shares in Hecla and Calumet from friends of lesser faith, Shaw must have been close to bankruptcy himself. A legend, too probable to be pure fancy, says that Shaw locked his office door during these days and seldom answered a knock for fear it would be another process server. And at one particularly trying period the offices of the soon-to-be wealthy Calumet & Hecla Mining Company were inhabited only late at night after process servers had retired, exhausted. No matter what Ed Hulbert said about him later, it was Quin Shaw's unshakable faith in the Calumet conglomerate which pulled Agassiz and the company through.

On December 15, 1869, the Hecla Mine paid its first dividend of $5 per share, and during August of the following year the Calumet followed suit. In May, 1871, the Hecla, Calumet, Portland, Scott, and Hulbert mining companies were consolidated into the Calumet & Hecla Mining Company with a capital stock of

40,000 shares. Up to the time of the merger, Calumet stockholders had been assessed a total of $15 per share and had received $15 in dividends. The Hecla shareholders had been assessed $25 and received $32 in dividends. One group which had kept faith even when Calumet shares fell to 25 cents broke even on their gamble, while the other had already made a profit. In a few weeks, both received more evidence of the blessings which were to come to the faithful. The directors of the new corporation presented the shareholders with 10,000 shares of Calumet & Hecla stock.

It was the Calumet conglomerate's first Christmas; an initial gift-giving which has been repeated, almost uninterruptedly, for seventy-odd years.

Is it any wonder that C. & H. shareholders put in a word for Quin Shaw and Alex Agassiz, when they thanked the Lord for His other blessings?

As for the discoverer of the Calumet conglomerate lode, he was a living proof of that ancient mining axiom: "There's a great difference between the finder and the founder of a mine."

Ed Hulbert lived the rest of his life in anticlimax.

Once he left Red Jacket and the C. & H. location, he went to Houghton and became the chief enthusiast behind one of the first railroad promotions in the Copper Country. It was to be a wood and strap-iron affair with its right of way laid out along the south shore of Portage Lake to connect Houghton and Red Jacket. But, typically, Ed overlooked the civic pride of the town of Hancock, across the lake from Houghton. Hancock citizens were so incensed at the omission of their city from the right of way, that they bought up controlling interest in the venture and let it die a natural death rather than see their rival metropolis become the terminus.

Unabashed at his first failure, Ed had another try at railroad promotion. When the voters of the Copper Country, as testimony to Hulbert's genuine popularity, balloted him into the state Legislature, he had a bill put through the House granting several thousand acres of land to the new railroad. In July, 1883, the new line was opened (it later evolved into the Marquette, Houghton & Ontonagon Railroad and finally into an obscure possession of the

Canadian Pacific Railway) and the Copper Country at last had an all-rail connection with Chicago and the eastern seaboard. No one seems to recall what occurred, but so far as is known Ed Hulbert was frozen out as usual.

Some time toward the end of the 1870's, Quincy Adams Shaw, for fairly certain but unproved reasons, presented Ed Hulbert with a thousand shares of Calumet & Hecla stock worth about $300,000 at the time. C. & H. was paying regular and generous dividends, and the resultant annual income would have made life comfortable for most men; but, with this new stake in hand, Ed began taking new fliers in mining shares: a sure-thing mine here, another C. & H. there. Before long, with one costly fiasco after another, the thousand shares were sold and the proceeds gone. Then Shaw, with no recorded explanation, put Ed Hulbert on a generous pension.

During the nineties, Ed washed his hands of the Copper Country for good and, with his wife and son, departed for Italy. They settled in Rome, where Ed, it is said, developed an overfondness for Chianti and the potent wines of the Piedmont. He lived to see the day when a single share of C. & H. stock sold for $1,000, a price which would have made his original interests worth an estimated $24,000,000. The shares he once had held in the Calumet Mining Company, alone, were worth more than five million dollars on the day he died in 1910.

Ed Hulbert's final, extravagant gesture, if you can believe a newspaper report, was in marrying a young Italian girl, Carlotta Caruso. Carlotta had been his wife's traveling companion until the Hulberts adopted her as their daughter. Some years after his wife's death, when Ed was sixty-five and Carlotta twenty-three, they were married.

Hulbert, however, has had a fantastic postmortem revenge on the Copper Country which used him so shabbily. In several of his letters written from abroad, Ed hinted that he knew where there was another vein of pudding stone, "far richer than the richest part of the Calumet conglomerate." He even furnished the approximate location of the lode. Past that, however, he would not go, for the land which is supposed to include the vein was still owned by a company which "got the best of me." Hulbert called this secret

deposit the Tomahawk Lode and, judging from the few existing records which mention the lode by name, a great deal of money and effort has already been wasted in a, so far, fruitless search for it. It is sad to think that Ed Hulbert's only Copper Country epitaph has been written with still more red ink.

The fabulous story of Calumet & Hecla, for the twenty years after the consolidated companies paid their first dividend, amounts to a biography of Alexander Agassiz. While it was Quincy Shaw who guided the company through trouble-beset financial jungles, it was Agassiz who led the corporation into an Eden of dividends; and, while Shaw's unshakable faith may be recalled in financial circles, the foresighted leadership of Agassiz is written indelibly in mining archives. It will be long remembered that Alex ran the affairs of the Calumet & Hecla as though his eyes were ten-power field glasses.

For the three decades during which Agassiz actively managed C. & H. affairs he was an eternal nemesis to the board of directors. They shuddered as they entered the august Boston offices on patrician Ashburton Place, to convene for the company's annual meeting. What new extravagances would that spendthrift Agassiz demand this year?

Agassiz often said, "I'm always willing to spend a dollar and a half if I can see it'll bring three dollars in the future." It was his idea to look twenty to thirty years ahead. The C. & H. shafts were planned on such a basis, and Agassiz bought equipment to fit in with this conception of mining; but the complacent directors, contentedly spending their dividends, seldom were able to see past the $1.50.

For example, in 1883, Agassiz demanded money enough to install a 5,000 horsepower hoisting engine. It was a colossal piece of machinery for the era, and the talented engineer, E. D. Leavitt, established his amazing reputation after designing it. The engine was designed to hoist six skips, each with a capacity of four tons of red rock, from the unheard-of depth of 4,000 feet. Known as the "Superior," it was greatly oversized for the capacity of the mine, which had been equipped with mere two-and-one-half-ton skips, hoisted from about 1,500 feet. These capacious new skips

would hoist more rock than the C. & H. stamp mill could handle. Agassiz's calm reply to objections was to ask for still more money to enlarge the mill.

On the occasion of another directors' meeting, Agassiz announced that he had just ordered a particularly expensive piece of machinery junked. The directors' horror increased when they realized that the machinery was still in the course of manufacture and hadn't even left the builder's plant. Agassiz's answer was that he had found a machine of entirely different design would accomplish the particular job more efficiently.

Agassiz was invariably right! Budding traction systems, power companies, and electric lighting corporations bought Calumet & Hecla copper as fast as the company could make it. The most parsimonious among the directors were forced to admit that the corporation was fortunate indeed in having a superintendent with the foresight to keep well ahead of this snowballing demand.

Whatever critics Agassiz had, were not C. & H. stockholders, but scornful westerners who said that any man could make a success of a lode as rich as the Calumet conglomerate.

In all probability, it was not Agassiz's mining achievements they were resenting but his unique extracurricular activities. While he was earning his rightful place beside the immortals of western copper, he was also building an even greater reputation in another branch of endeavor. Alexander Agassiz became the wealthiest professional zoologist who ever lived!

His eminence as a zoologist, in fact, reached the point where at least one biographer has deplored a material world which chooses to remember Agassiz more as a mining tycoon than as a scientist. How much more fitting, the biographer said, to remember him for his definitive papers on the love life of radiates, crustaceans, annelids, and pelagic tunicates! What were millions upon millions of pounds of copper compared with cogent monographs on the embryology of the ctenophoric jellyfish and the balanoglossus?

As a matter of fact, in his later years, Agassiz ran the affairs of the richest metal mine on earth as a side line to zoology. He visited Michigan only twice a year, spending the rest of his time on specimen-collecting expeditions or attending to his duties as curator of the Harvard Museum of Natural History.

But by this time Alexander Agassiz had brought Boston to the Copper Country. His business efficiency and his long-range practicality converted the boom villages of Red Jacket, Blue Jacket, Yellow Jacket, and Tamarack into suburbs of the Hub, though they were a thousand miles away. The house on Ashburton Place cast long shadows.

CHAPTER XIV

BENEVOLENT OCTOPUS

IT WAS IN 1898, towards the end of still another prosperous year, that the village council of Red Jacket gathered to ponder a problem which has seldom confronted any community anywhere. The Red Jacket solons faced a pleasant dilemma. It was up to them to figure out how to spend the community's money.

Every year, Red Jacket saloonkeepers called at the village clerk's office and left behind upwards of $27,000. For all their vast thirst, the citizens seldom robbed, burgled, or killed one another; and the police force was practically an honorary body. The village had no need for a park—the company had already given one. The fire department was handsomely equipped, the village streets were paved and lighted, and the Copper Country had somehow escaped a yen for statues. Yet there was $50,000 in the village treasury, and so far no one had thought of a sensible way to spend it.

Then up spoke a councilman who had been brought up in Boston. "What Red Jacket needs," said he, "is an opera house. This isn't a Klondike boom town."

And he spoke the truth.

Ed Hulbert's red pudding stone had built a young metropolis where, thirty years before, there had been nothing but pine and Billy Royal's Half Way House. Sixty-six thousand people had come from half the world to mine and mill some of the richest vein rock the earth had ever disclosed.

Thirty years has been the entire life span of most American mining camps. Many vanished before they outgrew their boomtown, dance-hall days. But here an ephemeral boom town had actually grown to manhood. It had butchers and bakers, merchants and chiefs. Now it was ready for culture.

An opera house, the council concurred, was just what Red Jacket needed. The members were so enthusiastic that they telephoned

C. K. Shand, Detroit's leading architect, that very night and commissioned him to draw up plans at once. It took a year to complete the tiresome details, but on March 20, 1900, a handsome, three-story structure of native red sandstone was ready to seat eleven hundred of Calumet Township's upper crust. Those who were vulgar enough to mention the matter said the elegant structure cost $59,815.18.

Red Jacket agreed that their councilmen had spent wisely, for in the next few years the greatest names of the theater trod the boards of their proud opera house. The incomparable Modjeska, the divine Sarah Bernhardt, Maude Adams, and the lovely-of-lovelies, Lillian Russell, were delighted to travel to the Keweenaw, for no other American audiences were more friendly or applauded more gratefully. Red Jacket, in fact, was known to the "profession" as one of the best show towns in the country.

Calumet Township grew up at the first knuckle of the Keweenaw Thumb, thirty-four miles from Copper Harbor, ten from Portage Lake, and seventy from Ontonagon. Its heart, commonly known as Calumet, was the property of the Calumet & Hecla Mining Company. Just as old Boston centers around Scollay Square, the independent villages of Laurium and the Jackets—Red, Blue, and Yellow—nestled around Calumet. Radiating from these were other settlements—Osceola, Tamarack, Kearsarge, and Centennial. Theoretically these villages which made up the township were entirely independent, but actually they deferred to the Company as grandchildren to a wealthy patriarch.

Some of the richest copper ground on earth lay beneath the few square miles within the township boundaries. Thirty years hadn't exhausted the lodes; if anything they were just now reaching their prime. And the citizens, proudly regarding their new opera house, their library, and their park, told one another that the township might one day be as great as the mines. They had long ago accepted the passion for permanence which characterized their Boston godparents. They were told that Calumet set an example for mining centers everywhere, and they could well believe it. While there was still plenty of wenching and drunkenness in the back streets of the Jackets, Alexander Agassiz and all he stood for reigned on Calumet Avenue.

In the years between 1870 and 1900, while Agassiz was piloting the Calumet & Hecla to world importance, half a dozen neighboring companies grew rich and successful on the copper range. The Osceola, Centennial, Wolverine, all top amygdaloid mines, would have been considered phenomenal if they had not been dwarfed by the Calumet conglomerate. Their officials might have aped the strong-arm methods of Butte and Bisbee, if they had not been so intent on running little Calumet & Heclas. Alexander Agassiz conceived one of the first industrial patriarchies in America and his neighbors emulated him slavishly. Many a miner working within the township toiled in an independent mine, but he and his fellows felt the ubiquitous hand of the company as surely as if they had been on the C. & H. pay roll.

A man who lived for years in the shadow of Calumet & Hecla says the company always made him think of that time-honored advertisement of some forgotten furniture concern: "We Stand Behind Every One of Our Beds." The wife of an ex-trammer explains, "The company was wonderful—a man always came and fixed the toilet." Strike an average between these two statements, and you have a fair idea of what life in Calumet Township was like.

If you lived on company property you rented one of the twelve hundred company houses and paid only six to eight dollars a month in rent. You could build your own house if you preferred, but only on rented land with penalizing clauses in your lease. You could buy land outright in Red Jacket or Laurium and build the house of your choice, but your independence amounted to little more than a gesture. Your home was heated with coal brought on company boats, you washed in water from company pumps, had your dinner under company-made electric light. Even your garbage was carried off in company wagons. The books you read were from among the sixteen thousand volumes of the $50,000 company library. The company penetrated your most private life: more than likely your wife would have your children at the company hospital.

No one could deny that, for the most part, company infiltration into your life was good and most economical. The schools in which your children were educated were among the best in the United

States. The Froebel system of kindergarten teaching was adopted by the Calumet schools long before it was accepted by the school systems of great cities, and even the youngest pupils were cosmopolites, for they imbibed progressive education together with Italians, Poles, Swedes, and Finns. Sundays, you went to the church of your choice; twelve denominations and thirty churches flourished in Calumet Township. The company stood ready to give, rent-free, ground for a house of worship for any reasonable faith. Sunday afternoons the menfolk could bowl, play billiards, or talk in company-owned clubrooms. The young bloods could drill with the Calumet Light Guards in the $33,000, company-built Armory.

If you died underground, if you were sick or your family ailed, there was an employee benefit fund which provided for such contingencies. If your family birth rate got out of hand a company nurse called and made suggestions. If you were hopelessly improvident the company did what it could to teach you to keep your share of the $6,000,000 in wages it paid out every year. You couldn't expect to grow rich, but your monthly stipend was more than ample in a community where living was simple and the company made a business of keeping your expenses down.

Your wife shopped for groceries in either Red Jacket or Laurium and, notably, at independently owned stores. She could take advantage of week-end sales and so spread the budget as far as it would go. One of the pioneer cooperative meat and grocery stores in the United States was located at Tamarack. It was financed with mine money, but mine officials had no part in its operation. It was founded in 1890 and was so successful that the *Saturday Evening Post* devoted an article to it, and the whole country marveled at such progressive economies. The Calumet & Hecla and its independent neighbors never countenanced that curse of most mining communities—the racketeering, employee-bleeding "company store." When Henry Ford was still thinking "Model T" thoughts, the Lake magnates were encouraging their employees to raise their own vegetables and keep their own cow, and provided land free for the purpose.

Alexander Agassiz discovered, long before other corporation heads, that a well housed, well doctored, and diverted employee

Calumet & Hecla Consolidated Copper Company

They still find huge masses underground. This chunk of solid copper (weight unrecorded) was recently uncovered on the eleventh level, Ahmeek Mine, the busiest and most profitable property in operation on Lake Superior. Though now a guarded, defense industry, the Ahmeek surface plant was, until Pearl Harbor, the mecca of all tourists—the largest steam hoist in the world, its awe-inspiring feature.

Photo by Author

GHOST TOWN

". . . little of the old life of the copper range is left today, but you can still see traces of it in the abandoned shafts and miners' houses clustered around the Central Mine—once known as the Keweenaw's Duchy of Cornwall."

roll shows up in production figures. Back in 1868, before it had paid a single dividend, the Calumet & Hecla Mining Company had a company hospital, perhaps the first industrial hospital in the United States. Other corporations of the time said this interest in employee health was foolish pampering, but Agassiz was not one to let others mind his business. C. & H. and its neighbors looked after their children, and if the children sometimes grew rebellious at this paternalism there wasn't much they could do about it.

The simpler lives were good ones, but the white-collar workers, living a more complicated social existence, were inclined to resent the Boston caste system, superimposed on Calumet Township. A clerk was a clerk all twenty-four hours a day, and his wife couldn't expect to be included in the afternoon whist parties of ladies whose husbands bore such titles as Assistant Geologist, Associate Metallurgist, or Mill Engineer. And these ladies, in turn, draped by Red Jacket couturiers, were apt to feel uncomfortable as they passed down the reception line at Calumet's yearly balls. This impressive line was invariably made up of transplanted Bostonians who brought the airs and graces of an older world to what they considered frontier functions. Those in the upper reaches of the company mingled, in their social lives, with only the merchants, bankers, and lawyers of the community. Even these leading lights, they considered rather quaint.

This tight little world lived by virtue of the twenty-one prolific shafts of the Calumet & Hecla Mining Company. These fabulous underground highways kept C. & H. production on a par with that of any other mine on earth, and one year outdid them all. A billion feet of timber supported the endless miles of levels, stopes, and drifts. Another forest of dressed pine went underground to line the shafts; and huge steel skips, big as freight cars, sped up and down them at forty miles an hour. Double-decked man cars hurried six thousand miners to and from work as rapidly and nearly as comfortably as the speedy passenger elevators of the Flatiron Building in New York City. The greatest, deepest shaft of them all was the Red Jacket—man's nearest approach to the center of the earth. All the way along its 6,000 feet of vertical depth it was wider and broader than your living room. The Red

Jacket shaft was so deep and arrow-straight that a pebble dropped down its mouth would bounce against the pine-paneled sides as the earth rotated.

Reverberations of the Calumet & Hecla's whirring hoists were heard plainest a thousand miles to the east on the Charles River. The twenty-one shafts were financing a copper élite in Back Bay Boston, as rich and haughty as the East India aristocracy once had been. Shares Quincy Shaw had begged friends and relatives to buy for a dollar in the 1860's were worth a round thousand dollars in 1907. C. & H. dividends were building mansions for families to whom Upper Peninsula Michigan was still, in the words of that seventeenth century explorer Baron L'Hontan, "the fag end of creation." Names dating from the *Mayflower* and Plymouth Rock were commonplace on the roll of C. & H. stockholders—Putnam, Frothingham, Bowditch, Hunnewell, Sargent, Thayer. Such early American immortals as Paul Revere, John Alden, and Miles Standish may have been missing, but their cousins were prominent among those listed. Brahms and Beethoven were beneficiaries of C. & H. largess, for Colonel Henry Higginson met the Boston Symphony Orchestra deficits, at least in part, with Michigan copper dividends. Literature, too, owes a debt to Calumet & Hecla—633 of its shares reputedly kept a Miss Amy Lowell in long black cigars.

With a lavish Boston aristocracy and the well-being of 66,000 Keweenawans resting on their shoulders, Alexander Agassiz and his board of directors may be pardoned if they occasionally forgot some of the democratic principles their forefathers fought for in the American Revolution.

Critics accuse the company of running politics to suit itself. Its connivings, detractors say, began in Calumet Township, and extended through county and state to the very halls of Congress. The company, had it bothered to reply, could have pointed to the neighboring Iron Country, where politicians taxed the mining corporations unmercifully. The Calumet & Hecla preferred to spend as it chose, and would go to great lengths to retain this privilege.

Oldsters say election fixing in Houghton County was accomplished by pure psychology and seldom, if ever, by thuggery or ballot-box stuffing. The company simply saw to it that election

judges were friendly and could be trusted to remember who buttered their bread; a C. & H. straw boss or two invariably sat among them. A voter entering the polling place was asked whether he wanted a red or blue ballot, though the question was unnecessary. The blue ballot was Republican, while the red, even then, had its present-day connotation; it was left-wing, low-tariff, it was Democratic. Only God Himself, it is said, could help a miner who faced the election judges and said, "Red, please." Each day, thereafter, he was put to meaner and harder tasks so that he was finally driven to depart of his own accord or became so openly rebellious that he could be fired with justification. Election returns in Houghton County seldom surprised anyone.

The company, keeping a weather eye on the polls, usually managed to put down any advanced ideas occurring to the Michigan solons at Lansing. Patriots in the state legislature gagged every time they read the C. & H. stockholders list. Hardly more than 10 per cent were residents of Michigan. Seldom did a session pass without proposed taxation on copper dividends rolling out of the state. Keweenawans understood why such bills never went through. The company also found it advantageous to have a friendly senator or representative in Washington. One of the nation's greatest producers of copper, it liked to see tariff walls built high.

Once Calumet Township reached 66,000 population, it could have become a city. But this was not to company liking. Red Jacket and Laurium could be run more cheaply as villages, and the company, of course, ran Calumet as its chattel. The township government ran the villages, the Houghton County board ran the townships, and the Calumet & Hecla ran all of them. Once the company, tired of the continuous squabbling over the fee office of township treasurer (it was probably the fattest plum in Michigan), suggested that state legislators alter the existing laws. After this, all the township treasurers of Michigan worked on fixed salaries. Yet the only recorded criticism of company high-handedness is that it made election nights so dull.

Calumet Township, grown tall and sturdy on its diet of copper rock, was undoubtedly a regimented domain; but it was this very regimentation that lined its streets with homy, though liver-

colored houses (the company was partial to this uninspired pigment) and its broad parkways with tall shade trees. The houses were not the crude bachelor hovels of the Keweenaw's earlier days. Their windows were curtained, and their front stoops swept immaculate. They bore the face of home and children, and every chimney smoked cheerfully, as if to say, "This is a community of regular pay days."

In the first decade of the new century, all of Europe seemingly poured through America's front door. And the thousands who found their way to the Keweenaw couldn't believe their eyes when they saw the comforts their compatriots enjoyed every day in the week. To these newcomers, Calumet Township was paradise and, in their eyes at least, the company was justified in regarding itself as God. They gratefully adopted the Keweenaw as their own, their native land, and the day on which they became United States citizens was only an incident compared to the day they moved into a company house. Those who had stopped off in the squalid industrial centers of the eastern states were even more thankful for the benevolence of the company. They had a standard of comparison.

Sweetness and light, however, didn't reign universal in the middle of the Keweenaw thumb. There were individualists with a holy hate for the company's domination. Men who had grown up in free and easy copper camps, from one end of the range to the other, bitterly resented the industrialization of their beloved frontier country. Cornish shift bosses often threw up steady jobs under the aegis of C. & H. for precarious employment at one of the prospect mines some new company was always developing. Finnish trammers worked for the company only in between their meager potato crops, and the Irish willingly risked their jobs to run for public office against a company man. Old-time Germans saved every penny until they could go into business and so call themselves independent.

Newer arrivals, although they may not have realized their motives, gathered their children together and went off on the steam train to Houghton or Hancock. On a Saturday these thriving lake ports were crowded with miners and their families who could have shopped as well if not better right at home. The twin cities some-

how gave them a feeling of being on their own. Single miners found escape in the saloons of Red Jacket hard by company property. Company or no company, Red Jacket was an old-fashioned boom town on Saturday night.

Directly after church, on summer Sundays, Calumet Township moved into the surrounding pine forests. Some took the trolley cars and rode out to the Ferris wheel at Electric Park. Some saved up, hired a horse and rig, and drove out to the Cornish community at the Allouez Mine, four miles away. Young bloods made a day of it, and went on horseback all the way to Copper Harbor and Fort Wilkins. It was an historical journey, for all along the road they could see abandoned shaft houses and listen to the reminiscences of old folk who refused to move from their near-by homes.

Fact is, the Keweenaw had changed its face. The day of the pioneer mines was largely past, and life on the range was centered around Ontonagon, Portage Lake, and Calumet Township. The mines to the west were producing plenty of copper, but they, like the Osceola, Tamarack, and Kearsarge, were overshadowed by the Colossus of the range. From here on in, the people of the Keweenaw as well as the outside world, thought of the Copper Country as the Calumet & Hecla.

While the amygdaloid mines involved more shareholders, employed more miners and produced more copper than the mines working the fissure and conglomerate lodes, the amygdaloids stand second in the matter of profit.

The total dividends paid by all Copper Country mines together amounted to $325,017,047 by the end of 1929. The twelve principal amygdaloid mines paid 44.4 per cent of this total amount. The single corporation, the Calumet & Hecla Mining Company, with its major earnings taken from the conglomerate paid 49.4 per cent of this immense sum.

The explanation, is, of course, that C. & H. was typical neither of the Michigan copper range nor of any other mining camp in the world. Fact is, that up to the depression of the early 1920's, C. & H. held the indisputable record of being the most profitable metal mine on earth. Not even the fabled gold and silver bonanza mines of Nevada, California, or Alaska equaled the total dividends paid by C. & H. In the course of fifty-eight years the corporation paid its stockholders more than *one hundred and sixty million dollars* in dividends.

CHAPTER XV

COPPER CORNER

IN AN ERA WHEN ten million dollars is little more than the down payment on the price of a battleship or the cost of running a modern war for ten minutes or so, it is difficult to realize that this was once a breath-taking amount of money. But in 1899, when the Calumet & Hecla Mining Company paid its stockholders $10,000,000 in dividends on a single year of operation, it was an incredible sum. The C. & H. financial statement was an eighth wonder! Men rolled the lush figures on their tongues and boasted that only America could produce such a splendid example of business acumen and mining enterprise.

In those days, the Calumet & Hecla, tucked away in the backwoods of the unlikely mineral state of Michigan, was a name to conjure with, as impressive as U.S. Steel is today and just as potent in world markets.

It was the C. & H., with the mighty Anaconda of Montana in its corporate pocket, which broke up the great copper monopoly of the late 1800's, after dictating its own terms to the House of Rothschild and the financial wizards of the Bank of France. And it was the C. & H., aided and abetted by independent copper mining corporations of Spain and the American Southwest, that pricked the bubble of Amalgamated Copper, sending Standard Oil barons scurrying back to their oil fields.

In all the long history of market rigging and stock manipulation, there have been only three major attempts to monopolize the world's supply of copper. And in two of these, Calumet & Hecla called the monopolists' bluff. The first attempt, and incidentally, the most successful, misfired just about the time Ed Hulbert was searching out the Calumet conglomerate lode. It was done to death, not by corporate generalship, but by the American Civil War.

The original copper monopolists were, oddly enough, Welshmen; and their combine, formed in 1840, flourished for two decades as the Associated Smelters of Swansea, Wales. The greedy gentlemen of Swansea were not miners, but processors of copper ore; theirs was a monopoly of metallurgy. The combine prospered because copper, until the discovery of the native metal of the Keweenaw, was found only in complicated ores which required expert refining. And in the middle 1800's that meant Welsh refining. The Swansea smelters inherited their skill from fathers and grandfathers who had spent their lives extracting tin and copper from the difficult ores of neighboring Cornwall. They knew smelting better than anyone else in the world. And so the world came to Swansea with its ore.

It was a satisfactory arrangement for both mine owners and processors until the Associated Smelters was formed. Then the Welsh, previously satisfied to make a reasonable profit on their smelting service, demanded that the mine owners sell them the ore outright—at Swansea's own price! Deductions were made for imaginary handling charges, theoretical moisture in the ore and often for no reason at all. The mine owners, though they railed bitterly at the Associated group, were helpless. The few who attempted to run smelters of their own only served to prove how dependent they were on the metallurgical prowess of Swansea. Copper prices prior to the Civil War were simply not high enough to leave a profit from inefficient smelting of low-grade ores.

With most of the earth's copper ore flowing through the bottleneck at Swansea, the Welsh monopolists were soon dictating the price of copper ingot. This was in the pot-and-pan days of the red metal, and the consumer public asked no questions when the price of kitchen utensils rose under the monopoly. It was a beautiful set-up while it lasted, with the Associated Smelters collecting a profit both on the raw ore and on the finished product.

Then came the Civil War and its 55-cent copper! Even the most inefficiently smelted copper could still be marketed profitably at such a price. Mine owners hurriedly put up furnaces, poured their own ingot, and shrugged at the metal thrown out with slag. Swansea remained the smelting center of the world, but it no longer dictated market prices.

Unwittingly, the Welsh had a great deal to do with the first mad rush to the Copper Country. Marine-minded congressmen deplored over and over again the fact that the young United States, so rich in natural resources, should still depend on her recent enemy, Great Britain, for the copper sheathing which covered the bottoms of her wooden merchant vessels. The nation's newspapers took this congressional sorrow to their hearts, and the American public was told time and again that, unless something was done about the matter, those fiendish Welshmen might one day decide to leave us with our bottoms entirely bare. This publicity, as much as anything else, induced many men to leave their homes to seek the Keweenaw's copper masses, which the U.S. Navy and American shipbuilders were said to be so willing and anxious to purchase.

That first copper corner, however, was so much petty larceny in the light of the next attempt. In the days of the Welsh cartel, the entire world used only 50,000 long tons a year of the red metal. By the time of the second monopoly, the world consumption of copper had advanced to a quarter of a million long tons annually. Furthermore there was no longer a single bottleneck or main artery through which all, or even the majority, of the world's ore must flow. Instead, by the 1880's, the great American copper mines of Michigan, Montana, and Arizona, as well as mines in other parts of the globe, were fully developed. Now it would take a high, wide, and very costly dam to control the flow of world copper production.

A round little man with thin hair, and dandruff on his coat collar, created just such a dam—at least temporarily. He was a Parisian, called Hyacinthe Secrétan, and he began life as humbly as more recent dictators. Hyacinthe got his start as a lowly clerk with an insignificant manufacturer of brass and copper novelties known by the extravagant title of the Société des Métaux. Secrétan, however, was a Horatio Alger hero and had already pushed himself into a partnership when his big chance came.

When the Franco-German War was declared, the ambitious M. Secrétan managed to wangle some highly profitable contracts from the French government to make brass rifle cartridges. In those days, the French were completely realistic. Instead of canceling

the unfulfilled portions of arms contracts when the war ended, they placed additional orders. The arsenals were nearly empty, and M. Secrétan was able to secure contracts for cartridges to restock them. He did so well, in fact, that the Société found itself with more orders than the little firm could handle. Hyacinthe thereupon induced a number of other French fabricators to merge with the Société.

Thanks to Secrétan's efforts, by 1887 the Société des Métaux was the largest manufacturer of brass and copper products in all of France; and, more significantly, the Société had become one of the largest buyers of copper ingot in the entire world!

Secrétan had his first taste of the heady champagne of monopolistic power when he engineered a short-lived but temporarily successful corner in tin. The Société was a heavy buyer of the gray metal for use in alloying with copper to make bronze. Under Secrétan's direction, the Société purchased all available tin, and the price soared from $90 to $160 per ton. The Société at first turned a neat profit on this operation, but apparently was still heavily involved in its tin corner at the time Secrétan began market operations in copper. There is some evidence, in fact, that his first interest in a copper monopoly was created by his desire to recover losses in tin.

Rigging the world copper market appeared—on paper—to be simplicity itself. Electricity was *news*, and its needs had sent world copper production from 153,959 long tons in 1880 to 258,026 long tons in 1888. It seemed certain that the electric light, the trolley cars, and the telegraph would devour the metal as fast as it could be mined. Why not, reasoned Hyacinthe Secrétan, make contracts with the principal mines of the world for their entire production —then, when the utility and traction promoters needed more copper wire, simply inform them, through wire manufacturers, that the price had gone up?

In February, 1887, the Société des Métaux, along with sixteen other organizations of varying interests, subscribed to a war chest amounting to thirteen and a half million dollars. Among those in the pool were the second largest bank in France, the Comptoir d'Escompte, the banking house of Rothschild, the influential German banking house of Bleichroeder, and another powerful

French financial group, the Crédit Lyonnais. The Société des Métaux itself contributed three million dollars, and Hyacinthe Secrétan put up, or at least was credited with, two million.

The first move of the Secrétan Syndicate, as the pool was first admiringly and then bitterly called, was to gain control of the output of the world's largest copper mines. The first agreement was made with Anaconda of Montana, and it was followed by contracts with the Calumet & Hecla, Rio Tinto of Spain, and other important copper mines throughout the world. In a short time the syndicate controlled between 75 and 85 per cent of the world's copper production.

Persuading the mine owners to enter into the plan naturally meant offering attractive inducements, especially at a time when electricity promised to boom the copper market. Essentially, the syndicate's proposition was to buy up the entire production of the various mines at the fixed price of thirteen cents a pound over a period of three years, with an option to renew the contract for four like periods.

Thirteen-cent copper was certainly something less than a sinecure; but at the time the offer was made the copper market hung at an uncertain nine cents a pound, and at its highest recent level was 11 cents. Furthermore, while electricity promised to consume a great deal of the red metal in the future, copper men were inclined to think this future still somewhat distant. A stable copper market for at least three and perhaps twelve years was thus very attractive to the mining barons—especially when so wealthy a group as that behind the Secrétan Syndicate guaranteed it.

The syndicate began buying operations in 1888, purchasing any and all copper offered for sale. This unnatural demand almost immediately sent the market soaring. In a single day copper went from eleven cents to seventeen. Still the syndicate kept buying. When the original fund of thirteen million dollars was exhausted, Secrétan borrowed more from the Comptoir d'Escompte. By August, 1888, the syndicate borrowings totaled nearly $25,000,000, and by December it was in debt for more than *thirty-three million dollars!*

The loans were made on what amounted to pawnshop principles,

with the Comptoir d'Escompte acting as a strangely muddleheaded pawnbroker. When the syndicate needed more money, it simply handed over tons of copper as security for a loan. But the second largest bank in France, unfortunately, was afflicted with the myopia which later distorted the vision of bankers of the 1920's. The loans were made on the basis of the market value of copper, which was entirely artificial. The French bankers lent money on seventeen-cent copper—the same copper for which the world had been willing to pay only eleven cents six months before.

Unsound or not, the syndicate was making immense profits, at least on paper. It purchased the output of Anaconda, Calumet & Hecla, and other mines under contract, at thirteen cents a pound and sold it for seventeen. Both sides of the Atlantic acclaimed Hyacinthe Secrétan the greatest of financiers just when the first flaw in his reasoning appeared. Secrétan, it seems, hadn't reckoned how nearly eternal the red metal can be. Iron rusts away, and the tin can is thrown on the ash heap. But secondhand copper goes on, practically forever.

With the copper market soaring above seventeen cents, scrap-metal dealers staged a field day. Battered copper pots and pans, corroded brass urns, vases and ornaments, cracked bronze bells and statues went into the furnaces and were transformed into copper, brass, and bronze ingot. Before the syndicate realized what was going on, it found it was making wealthy men out of theretofore pariahs—the junkmen. In a short time, the scrap dealers had thrown at least 70,000 long tons of copper ingot on the market. This amount represented approximately 25 per cent of the world's annual consumption. Obviously, the junkmen had punctured what was meant to be an airtight monopoly, and the syndicate was threatened with rapid deflation.

But Secrétan, the syndicate, and its shortsighted bankers might have stopped up this leak with several more millions of francs if a still less expected situation hadn't developed almost simultaneously. It was a sudden drop in copper consumption, one which a Parisian boulevardier like Hyacinthe Secrétan wouldn't be likely to foresee.

The timeless outlook of the people of India and the patience of Buddha had never entered into the calculations of Hyacinthe, who

seldom strayed far from the Champs d'Elysées and couldn't have known the workings of the East Indian mind. But India was the second largest consumer of copper in the world, and when the price soared the East Indians simply stopped buying copper, Secrétan's calculations were upset again—this time to the disastrous tune of 30,000 long tons a year.

Between the junk dealers and Buddha, the syndicate was forced to cope with an unexpected supply of 70,000 tons of salvaged copper and the reduction of 30,000 tons in consumption. It meant, literally, that world copper economy was faced with the prospect of gorging itself on an unwanted meal of 100,000 long tons of copper.

Early in 1889, it was evident that the Secrétan Syndicate was through. M. Deufert Rochereau, manager of the Comptoir d'Escompte, committed suicide, and then the world knew the story. The market spun downward, and in a single day the price of copper fell from its high point of 21¼ cents a pound to 7½ cents. With so many leading financial institutions involved in the now inevitable collapse, a panic threatened all France.

The Exposition Universale was scheduled to open in Paris that summer. This was no time for a panic, with France planning to display her affluence and arts at a world's fair. Therefore the Bank of France took an unwilling hand in the crisis and, making immense loans, was able to save the Comptoir d'Escompte from bankruptcy and pull through the other banking houses involved.

Hyacinthe Secrétan, incidentally, saw the inevitable end of his syndicate sooner than the Bank of France and, as nearly as can be determined, gathered up all the loose francs in the syndicate's office and disappeared.

The Secrétan Syndicate failed to the tune of *seventy-six million francs*. Its only assets were what amounted to pawn tickets on a quarter of a million tons of copper. In other words, 250,000 tons of copper was all the French bankers had to show for their loans. Thus, half the bankers of France found themselves in the copper business. Anxious to be done with the matter, they began dumping this huge backlog on the market.

Electricity, though a giant child, was still creeping, and it would take the world a year to use up this immense amount of metal:

a year without a single copper mine in the world turning a sheave, without a pound of new copper production! Mine owners naturally were aghast at such a prospect. Then the Calumet & Hecla, five thousand miles away in the fastness of Michigan, displayed its international power.

Quincy Adams Shaw and his fellow Bostonians hurred to Ashburton Place and held council of war. They got into touch with the directors of Anaconda Copper, who had hastily gathered in New York. Soon the recently laid Atlantic cable carried a blistering message to the C. & H. agent in Paris. Next morning, the august directors of the mighty House of Rothschild were treated to a new experience, and one not at all to their liking. A brisk American, his head high, obviously not in the least awed, began telling the Rothschild instead of, as was customary, asking.

"My principals, the Calumet & Hecla Mining Company of Michigan, as of tomorrow morning, will begin selling copper at *five cents a pound!* The Anaconda Copper Mining Company, as well as other large American mining companies, have agreed to do likewise. We don't propose to let you correct your mistakes at our expense. Gentlemen, what shall I cable in reply?"

The Rothschilds and other bankers holding the sack for the Secrétan Syndicate had only to resort to simple arithmetic to see the light. They stood to lose a great deal more money, if the copper the syndicate had purchased for upwards of seventeen cents a pound was sacrificed on a five-cent market. Even those acustomed to dealing in millions could understand simple subtraction. A truce was quickly made. The French bankers agreed to sell their 250,000 tons of copper gradually, over a period of four years. Even so, the copper market was depressed for six years afterwards, and the price of the red metal hung around nine cents a pound until this backlog was finally absorbed and world copper economy was stabilized by the demands of electricity.

The story of the third (and so far final) attempt to corner the world supply of copper has an entirely different, though equally incredible plot. The monopolists here utilized methods diametrically opposite to those of Hyacinthe Secrétan. Where Hyacinthe schemed to bilk the public by driving the price of copper up, his

successors contrived to beat the market *down*. And while both combines had the same ultimate purpose, the latter copper monopolists outdid Hyacinthe Secrétan when it came to shortsighted thinking. Actually, the two combines had only one thing in common: Calumet & Hecla took a leading part in the break-up of both.

Thomas Lawson, who began as one of the instigators of the Amalgamated Copper Company and became its prolix critic, wrote a series of articles for *Everybody's Magazine*, entitled, "The Crime of Amalgamated." He said there he had already written four hundred thousand words on the subject but had a great deal yet to say. The high points, however, can be covered in far fewer words.

The saga of Amalgamated begins one morning in January, 1899, when Henry Rogers was glancing through the bleak pages of the *Commercial and Financial Chronicle* as his liveried coachman drove him down Fifth Avenue in New York City to the Standard Oil offices. The *Chronicle*, for the most part, was dull that morning —a paragraph on the monopolistic Chicago meat packers here, a note on a new railroad bond issue there—and Rogers was about to toss it aside when he was startled by a brief column of figures. These statistics showed the dollar value of the leading American industries for the year 1898. Two industries in particular interested him—on reflection, astonished him.

When his brougham drew up in front of the Standard Oil Building, Rogers, with complete disregard for his dignity, jumped out; and he is said to have actually run inside. He burst into the mausoleum like office of William Rockefeller, brother of the messianic John D., shook the morning *Chronicle* in front of the Rockefeller nose, and exclaimed: "Christ almighty, Bill, we're in the wrong racket! Take a look at these figures."

The figures which had so agitated Rogers stated calmly that the total production of oil during 1898 came to fifty-seven million dollars while the copper produced during the same period amounted to *one hundred million!*

"How long," Henry Rogers asked, "has this been going on?"

Now, while the accuracy of this scene cannot be vouched for, Standard Oil did enter the copper business with what couldn't

have been much more forethought. Doubtless, the copper boom of the 1890's had something to do with its quick-trigger thinking. All the United States had seen the copper market soar from its Secrétan-inherited low of nine cents a pound in 1894 to eighteen cents in 1899; and, whether Henry Rogers knew it or not, Calumet & Hecla was about to pay its record-breaking dividend of ten million dollars. Moreover, all American copper mines had already demonstrated a proportional generosity.

Whatever actually occurred that morning in the offices of the Oil Trust, this much is certain. John D. Rockefeller said, in effect, that he was willing to wait until the automobile came along, at which time the oil industry would make the copper industry seem insignificant. In the meantime he wanted no part of copper mining. William Rockefeller and a half-dozen other Standard Oil officials agreed with Rogers: maybe they were in too limited a line of endeavor. The result was that on April 27, 1899, the Amalgamated Copper Company was formed under the freehanded corporation laws of the State of New Jersey.

When the rumor that Standard Oil was going into "coppers" reached Wall Street, the brokers handled a volume of orders the equal of which hadn't been seen since the frantic Black Friday in the seventies. Rumors of mergers, amalgamations, and consolidations ran rife, and all who entered the market hoped to own shares in mines which might soon be under Standard Oil's wealthy wing. During the first two hours of trading on the morning of May 4th, the New York Stock Exchange handled four hundred million dollars' worth of buying and selling orders. Copper ingot went to nineteen cents a pound!

The public, as usual, was a little late in climbing on the band wagon. Amalgamated had already been quietly buying important blocks of stock in equally important western copper mines. Shortly, it was seen just how important! It was claimed that Amalgamated owned 75 per cent of the stock of the Anaconda Copper Mining Company, a majority interest in Boston & Montana Consolidated Copper & Silver Mining Company and evidently all the stock of both the Parrott Silver & Copper Company and the Washoe Copper Company. Amalgamated had also secured important stock in the United Metals Selling Company as well as

a number of other organizations which operated smelters and refineries.

All the mines under Amalgamated control were Montana mines; all were paying handsome dividends in their own right, and now, brought together, were the greatest copper-producing group in the world. The combined production of the Amalgamated group could supply the world with all the copper it was then using—single-handed. In fact, to the sorrow of trusting Amalgamated stockholders, they did just that for a time.

When Amalgamated Copper was put together, Standard Oil was in the midst of its most ruthless period of pinching out competition. The intent of Amalgamated apparently, was identical, and it adopted the same time-tried formula. The idea was to beat down the price of copper until small-time, independent copper mines could no longer make a profit and would be willing to sell out at whatever price Amalgamated chose to offer.

In October, 1901, Amalgamated began selling copper below the market and the metal promptly fell to 16 cents a pound. As other American mining companies dropped their prices to meet this competition, Amalgamated countered by reducing its price still lower. Copper ingot went to 13 cents, then to 12 and finally to 10½. When Amalgamated had no more ingot left on hand, it began selling copper still unmined, making contracts to deliver the ingot months later.

In the midst of this depressing operation, the mining-share market naturally dropped along with the price of ingot. Many an independent mine couldn't make a profit on 10½-cent copper, and numberless speculators in "coppers" lost their savings in the resultant bankruptcies. The Amalgamated stock itself dropped in value, and the margin buyers were wiped out in a forerunner of the fatal October of 1929. Not the least of the tragedy were those one- and two-share buyers of Amalgamated stock, of whom there were thousands, who were frightened into selling at a heavy loss as the shares fell lower and lower.

Before Henry Rogers and William Rockefeller were done, the blood of more than thirty suicides was on their hands. But, early in 1902, John D. Rockefeller was in a position to point out that perhaps the oil business was a pretty fair one after all. Amalga-

mated had succeeded in hammering down the price of copper, but had failed to frighten independent copper producers into begging for a part in the monopoly. Amalgamated hadn't worried Calumet & Hecla, for instance, one little bit.

On the day the price of ingot slid down below 11 cents, Quincy Adams Shaw and his fellow directors in the C. & H. met again at the house on Ashburton Place to hold another council of war. Now, Anaconda was their enemy—the Rothschilds were soon to be their ally. They telephoned several Bostonians who sat on the boards of leading copper mines of Michigan, Arizona, and New Mexico, asking for their cooperation. They cabled the Rothschilds of London who held large interests in the Rio Tinto mines of Spain, requesting and receiving a promise of cooperation. Now C. & H. with its potent allies was ready to show Rogers and Rockefeller the error they had made in seeking greener fields.

On the following morning, Calumet & Hecla, speaking for itself and all its allies, made an announcement: "For the present we have no ingot for sale. Until such a time as the market adjusts itself, we will store all the copper we mine!"

Now Amalgamated found itself in the unwelcome position of having to supply the world with copper at its own bargain prices! Rogers and Rockefeller had never met with such a situation in the oil business. When the Oil Trust cut the price of kerosene, competition shivered in its boots and either took its losses humbly or came begging Standard Oil to buy it out. But these independent copper men—they didn't seem impressed by Rockefeller tactics.

Amalgamated found little satisfaction in being the world's sole source of cut-rate copper; within a few months it made an announcement of its own. Copper ingot, as far as Amalgamated was concerned, would henceforth sell for 15 cents a pound.

Surprisingly Amalgamated's attempt at monopoly had no depressing after effect on world copper economy. When Calumet & Hecla, Rio Tinto, and allies threw their stored-up copper on the market, the huge backlog was absorbed at once. Electricity was gathering its full momentum while the copper kings were quarreling. The duel over, it absorbed every pound of red metal available. Instead of falling when the backlog was dumped on the market, the price of copper ingot went on up from 15 cents a pound.

It may seem strange that the utility and traction magnates didn't rush into the market and buy up all of Amalgamated's bargain-priced copper, instead of sitting by until the market went up several cents. But the economy of copper has some phases which won't be found in other basic commodities such as steel, tin, or wheat. For one thing, the market price of copper hasn't much to do with its consumption.

A railroad, for example, may take advantage of low-priced steel and buy up a supply of steel rails to replace the inevitable ravages of wear and rust. Likewise, a canner may stock up with tin plate when the tin market is attractive, for the tin can's life is short. On the other hand, no traction magnate or utility baron could be induced to string more trolley wires or power lines just because copper fell a few cents a pound. And copper purchases for replacement are negligible compared to other metals which rust and are subjected to wear.

Since the consumers of copper aren't much interested in a bargain, copper men have always reasoned, "Why cut the price of ingot?"

Because of this and the fact that the principal mines of the world have been in the control of wealthy groups, the price of copper has generally been kept above a comfortable minimum price. Except in times of extreme stress, especially the unprecedented depression of the 1930's, copper mining has been one of the most consistently profitable industries. Moreover, small independent mines with radical ideas of price cutting have been brought to reason in a hurry.

You might think that price fixing and market rigging would have brought down the wrath of trust busters before and after Roosevelt I. But copper has the happy faculty of seldom getting entangled with *vox populi*. Let the price of a loaf of bread rise a penny, and Congress will be called on to investigate the Board of Trade and the milling tycoons. But since the price of copper wire is never reflected in the cost of telegrams, telephone calls or streetcar fares, why should the man on the street be concerned?

As a general rule, the copper market rises and falls with general prosperity. In fact, during its adolescence, copper was a most sensitive barometer of world prosperity.

Before electricity, copper had a sub luxury status. Copper utensils were among the proudest possessions of a bride; a brass urn in the parlor ranked high among family lares and penates, and a bronze statue in the city square was expensive, else it couldn't be a very good one. The instant money grew tight or a depression threatened, the public simply quit buying utensils, urns, and statues. And later, when electric light, telephone, and telegraph systems were being woven together into webs of copper wire, periods of greatest activity were also times of general prosperity. The promoters built them when the public would buy traction and utility stocks and bonds, not when the price of copper wire was low.

In its adult phase, reached during the past forty years, the copper market has run true to form. As the demand shifted from such periodic customers as the traction systems to greater and more consistent users, the automobile and electrical equipment industries, it was significantly just behind the market. Only during the depression following World War I did these new customers show interest in a bargain copper market. For twenty-seven of the past forty years, copper has been bought as needed. The copper men set the price.

CHAPTER XVI

BLUE CHIPS ON RED METAL

A MOST UNMORAL TALE opens this chapter—the fable of the boy who knew better than to trust his own father *too far*.

The story begins late in 1898 at the Copper Range Depot in Red Jacket. That day a thousand people stood on the platform and cheered themselves hoarse in two dozen languages. The Sons of St. George Silver Cornet Band blared a nonstop rendition of "Hot Time in the Old Town Tonight," and the pine floor of the station shivered beneath rhythm-tapping feet. In the distance a dozen and a half busy Calumet & Hecla shaft houses frowned down upon such frivolity.

"A hell of a time for a celebration," the whirring hoisting drums seemed to mutter. "Alexander Agassiz wants more red rock at the mill; the stockholders expect more dividends."

But the youth in sun-faded khaki who stepped off the long-awaited steam train had no room for such worldly considerations in his whirling mind. He was a returning *hero*, confused, blushing, and appropriately modest. It was young Tom Polk * returning from the wars, one of the three Michiganders to storm San Juan Hill with the first of the roughriding Roosevelts. Tom was not only the hero of the Copper Country but co-hero of the entire state; and within a few months the legislature demonstrated Michigan's appreciation by voting Tom and his two doughty colleagues a special bonus of $500 each.

Now, while the nineteen-year-old Tom had lied artfully and extensively to get into the Army, he had no other qualifications for

*Tom Polk is not the ex-Roughrider's name, although the story is essentially true. The real hero asked that his name be withheld, remarking: "I've been kidded about this unmercifully by contemporaries, and I don't want another generation to begin all over again." The Aaron Mine, in reality, was the Arnold Mining Company, which, though now inactive as a copper producer, still exists to turn a deal now and then in summer cottage sites.

the career of a financier. Realizing this and being a good son, he asked his father what he should do with his $500 bonus.

"Tommy, my boy," replied the kindly parent, who was also a leading Copper Country banker, "we must put that money to work. Idle money, you know, earns no interest. We'll invest your five hundred dollars, and you'll see how an acorn can grow."

"Yes, Father," said the trusting lad, "you mean government bonds or stock in the Oil Trust."

"No, my son," the father answered patiently. "Oil stock is speculative, as we bankers say, and the government doesn't pay much interest on its bonds. We'll go over to the broker's office, and you'll see what you will see."

With this cryptic promise, the two set off, affluent son and wise old father. Soon they entered the broker's and passed through the front offices to a large customers' room where half a hundred men sat in overstuffed chairs staring at a huge blackboard which listed the names of several hundred mining corporations in alphabetical order. A busy man in a white coat chalked figures after one or another of the names, following his inspection of the ticker tape. Tom and his father took two of the empty chairs, just as Joe Catlan greeted them.

"What looks good this morning, Joe?" the father asked of the customers' man. "My boy doesn't know what to do with his bonus, so I'm giving him his first lesson in investment."

"I was just thinking," said Joe, "that first one on the list up there—the Aaron Copper Mining Company—they say the rock's looking awful good. Somebody said this morning, the Aaron might be another Calumet & Hecla in time. And you can't lose much at a dollar a share."

"O.K., Joe," said Tom's father. "Buy my son five hundred shares of Aaron."

When the two left the broker's office, young Tom was more puzzled than ever at the strange ways of the investment world. "But, Father," he asked innocently, "how about those other mining companies on the blackboard—those whose names begin with *K* or *M* or *T*—aren't they any good?"

"Tut, son! If Joe Catlan says the Aaron rock is looking good, that's enough for me. You heard him say it might be another

C. & H. Why, boy, you might have dividends all the rest of your life."

And there the matter rested! Young Tom had wangled a forty-dollar-a-month job with the local newspaper, and he was far more interested in the news he could pick up at the mine locations than in the mining-share market.

But one day, in an idle half-hour, Tom recalled the $500 which had passed through his hands so rapidly. He turned his reporter's bicycle towards the broker's and, almost before he knew it, there he was in the back of the customers' room. He peered timidly at the large backboard, wondering if that figure scrawled after the name "Aaron" really was "5." Joe Catlan fortunately appeared just then and confirmed it.

"Yep, you're a lucky lad," said Joe. "That Aaron stock has gone from $1 to $5 a share—what did I tell you?"

"You mean, my $500 is worth $2,500 now?" asked Tom incredulously.

"Right you are, and she's going sky-high. You tell your dad the Aaron rock is running more'n one hundred and ninety pounds of copper to the ton—that's better than Calumet & Hecla can show right now."

Tom made no comment but sped out of the room like a frightened rabbit and pedaled furiously over to his father's bank. "Dad!" he panted. "My bonus is worth $2,500 now. How do I get it out, quick?"

"Tut!" tutted the father reprovingly. "Joe Catlan just phoned me, says the Aaron stock's liable to go to $10 a share tomorrow."

"But, Father, mightn't it also go down?"

"Now see here, son, suppose Alexander Agassiz or Quincy Shaw or any of those Boston people had turned chickenhearted when C. & H. was just getting started. How'd they feel now?"

Not at all satisfied with this allegorical explanation, Tom set off slowly towards the newspaper office, thinking hard as he pedaled. He was remembering how Uncle Alfred had mortgaged his house to buy a thousand shares in the Red Metal Company; how the neighbors, the Cantinis, drew out all their savings to buy shares in the Great Lakes Copper Corporation. Tom seemed to recall that both Uncle Alfred and Mr. Cantini had said a good deal about

"a second Calumet & Hecla." But who owned Uncle Alfred's house, and where was the Cantinis' savings account today? After thinking this over for a block or two, Tom made a sudden decision. He swung his handlebars around and pedaled determinedly towards the broker's office. He entered the customers' room again. And this time there was no timidity in his bearing. His nearly beardless chin was, in fact, held high and thrust forward.

"I want my $2,500," he told kindly Joe Catlan with startling firmness.

"But, son, you'll be losing a fortune," said Joe, bewildered by the youth's determination. "That Aaron mine looks like another C. & H.—you'd better ask your dad."

"Skiddoo with that," said Tom. "Twenty-three skiddoo! Has there ever been another Calumet & Hecla? Just answer me that—has there?"

"Hush, lad! You shouldn't say such a thing." Joe Catlan's eyes darted about the customers' room, fearful lest some client hear this awful heresy. "Be still, I'll give you your money."

Tom followed him to the cashier's cage, where a check for $2,500 was hastily drawn and thrust into his hands. The boy who dared speak the truth was then hustled to the door. Only after Tom had pedaled up the street did Joe Catlan breathe evenly again, the terrible crisis past.

Tom Polk took his $2,500 and invested it in an education at the University of Chicago; and, when he graduated, it was into newspaperdom. He never did learn the inexplicable ways of finance; but, ever since, the Keweenaw has called him "The Boy Who Dared Speak the Truth."

For nearly a century, now, the people of the Copper Country have been what one old resident terms "the mining-share-buyingest folks anywhere." And this might well be considered understatement.

Until just a few years ago, no fewer than five brokerage offices flourished in the twin villages of Red Jacket and Laurium with a combined population of only 66,000, including women and children. Even now, in its waning days, the Copper Country loves its speculation. A leading firm of eastern brokers still maintains

large ground-floor offices in the Douglass House on the main street of Houghton. Where else in the United States today—except possibly some millionaires' resort town—will you find a broker's office with a fifty-chair customers' room in a village of 3,690?

The passionate devotion to mining shares which has marked the history of a good part of the citizenry of the Keweenaw had its beginnings as far back as 1849, when the Cliff Mine paid the first dividend of the district. Miners realized then, and seemingly passed the knowledge on to their offspring, that more and bigger fortunes could be made in copper shares than in copper mining.

One of the favorite stories of this era of Michigan's history is that of the mine bosses who raced one another to Boston so eager were they to bring news of a newly developed vein. The contestants in this curious trek were spurred on by the handsome profits awaiting the winner in the mining-share market. He could buy his shares and then settle back to watch the rise sure to come, the moment his news was bruited about the Boston Exchange.

It was in the early 1900's, however, that Houghton, Hancock, Red Jacket, and Laurium gained fame as the liveliest little mining-share towns anywhere. Every third citizen hustling down the street was en route to a broker's office, his appetite whetted by news of the Calumet & Hecla's latest extravagant dividend or rumors of a baby mine which had just struck vein rock and would soon shower copper dollars on its shareholders.

At a time when the United States as a whole was just looking into "coppers," as the brokers termed copper stock, the Copper Country lived, breathed, and ate them. With homes, families, and business enterprises founded on successful copper mines, it was only natural that bankers and barkeeps alike should listen to the promoter of some new mine who declared, "Our XYZ Copper Mine is sure to be another Copper Range, Wolverine, or maybe even another C. & H." The clincher was usually: "Get in on the ground floor. Buy shares in a baby mine and let your fortune grow with it."

These twin sales arguments were amplified by the prospective purchasers themselves. They had an inexhaustible supply of stories concerning locals who *had* bought shares in baby mines which *did* shoot up to Pantagruelian size. And, if no second Calumet & Hecla

had yet appeared, who could say but the XYZ Mine might, at last, be just that?

Everyone on the copper range knew by heart the tale of the husky teamster who put his life savings of $700 into the Tamarack when it was a baby mine. While the Tamarack fell somewhat short of the proverbial goal, the newest arrival on the range could tell you that the teamster had retired with a comfortable nest egg of $35,000.

Similar stories with slightly altered plots are legion. The only real difference between them is in their leading characters. In fact it is this variety of heroes and heroines that accounts for the Keweenawans' unshakable faith in copper shares. There was a success story to fit citizens of every rank and almost every occupation. More important still, there were copper shares priced for every pocketbook.

There is the story, for instance, of the boy who sold his graduation watch to buy shares in some forgotten Keweenaw mine. His parents didn't reprimand him for his profligacy, he recalls today, but were critical, instead, at his choice of a mine. And you can imagine how the proud parents boasted of their son's perspicacity when the shares rose to many times their purchase price within a few weeks.

Then there is the story of the wife of a bedridden Civil War veteran who trustingly endorsed pension checks over to brokers as fast as they were mailed from Washington. Not surprisingly, this tale ends with the shares liquidated for a fortune, the veteran revived by a long-needed operation and the couple living the rest of their days in awe of a host of servants.

There is excellent evidence that Bess Foster, Nellie Thomas and all their sister nymphs were able to retire less on the wages of sin than with the dividends from Keweenaw copper mines. There is some doubt, however, whether Bess and the "girls" acquired their mining stock with cash or by barter. Consequently their stories were cited less often than others as proof that shares in "baby mines" were equivalent to the pot of gold at the end of the rainbow.

Two stories, culled from copper range newspapers of the late nineties, demonstrate that, at times, preoccupation with the

mining-share market overshadowed life, death, and even the church.

Towards the end of 1896, the town of Ontonagon was destroyed by fire. Hardly a home was left standing; 344 buildings were burnt to ashes, and some 2,500 people not only were homeless but faced the prospect of a shelterless Superior winter. The *Herald* office, like every other business establishment, was destroyed, and the newspaper was able to resume publication only under great difficulties on presses in a distant town. The make-up of the *Herald's* first issue after the fire is an almost perfect expression of the Copper Country viewpoint.

On the front page, the editor printed a list of the homeless, acknowledged and thanked contributors of money and clothing and grieved over the cremation of the Odd Fellows' ceremonial goat. These routine matters disposed of, he got down to the really important news of the day. For a full, front-page column, he reported the latest news of the spectacular rise of Tamarack Mining Company's shares. In effect, he apologized because the recent bonfire had kept subscribers out of touch with Tamarack for several days.

About the same time the Sault Ste. Marie newspaper published a lengthy letter from a popular parson. He had been called from his parish in the Sault to an even larger one in the Copper Country and, having too many friends to write individually, he addressed the letter to all.

With three short sentences in his opening paragraph, the parson disposed of the state of his own and his wife's health, parish chitchat, and his best regards to old friends. The rest of the letter—possibly ten column inches of closely set nonpareil—the good parson devoted to a searching and exhaustive review of the mining-share market. Its thoroughness would have done credit to the newspaper's financial editor.

Diluting the word of God with late news of the markets was never considered irreverent in the Copper Country. Mining shares were conversationally important on Friday and Saturday—so why not on Sunday? The irreligious were unnecessarily cynical when they called the First Methodist Church of Calumet "the Red Jacket Stock Exchange." True, Calumet & Hecla officials were

known to gather out front after their devotions and exchange useful information on the stock market. But, after all, their devotions *did* come first!

All this, it should be remembered, was largely over and done with, years before the rest of the United States discovered the wonders of stock market speculation during the 1920's.

About the turn of the century the Copper Country learned to its amazement that there were copper mines outside of Michigan.

This startling news reached the Keweenaw late in the nineties when a C. & H. superintendent, Captain Jim Hoatson, took a busman's holiday in Arizona and spent his vacation locating the Irish Mag Mine. How the two Scots, Jim and his father Tom (in a region of totally different geological formation), showed experts where a new kind of copper deposit lay needs a volume of its own for the telling. The "Mag" became the unbelievably rich Copper Queen and, under the direction of the Calumet & Arizona Mining Company, was and is a nearly peerless bonanza mine.

The Keweenaw, however, was never interested in the romantic side of the story. Captains Jim and Tom promoted Calumet & Arizona largely with funds obtained by selling C. & A. shares to Michigan friends. How Keweenawans laughed at those who invested in the Hoatsons' C. & A.! Who ever heard of a decent copper mine two thousand miles from Lake Superior! It was not until the Irish Mag and Calumet & Arizona started mailing fat dividend checks that the Copper Country got out its atlases.

Then the Michiganders discovered there were endless western copper mines with shares for sale. And at the same time "outside" mining-share salesmen discovered the Copper Country's penchant for speculation.

Along the range the term "promoter" had a literal as well as an honest connotation. The Keweenaw lost money to local promoters who were impractical visionaries, to some who were complete fools, but to none who were definitely crooked.* And the range accepted the suave, overdressed strangers who were soon dropping off the

*In proof, Lake Superior people point out that, in a hundred years of the range's history, there are only two recorded cases of "salting"—both by bungling amateurs from the "five-cent-cigar belt" of Lower Michigan.

steam trains without dreaming of questioning their honesty. Goodness knows how many of them appeared and disappeared with how much Copper Country money before the title "promoter" became a fighting word!

The sorriest part of these visitations was that respected and well known men often allowed themselves to become involved. Copper Country lawyers, it seems, were especially vulnerable to marauding promoters. In fact, to an outsider it appears that the more larcenous the promotion the more impressive the local names behind it. One man recalls the day when the stock in an unusually fanciful western mine was offered for sale. A well known lawyer had been induced to "front" for the promoters, and his offices were used as a sales headquarters. At least an hour before the office opened a block-long queue of hopeful investors had formed; and it was midafternoon before their money could be taken from them. This "promotion" proved to be such a barefaced swindle that Keweenaw barristers thereafter made at least a cursory investigation before handing over their good names to smooth-talking strangers.

The Copper Country, however, was far from alone in its susceptibilty to glib mining-share salesmen. During the early 1900's the entire United States dabbled in "coppers." You could buy a share of copper stock for as little as ten cents, or take your choice of a wide variety of stocks priced in the neighborhood of a dollar a share. Speculation in "coppers" made a certain amount of sense, too. Any one could understand how much copper the trolley cars and electric lights needed. No wonder weary clerks and budget-ridden housewives sought an escape from drudgery in the hope of making a killing in Western "coppers."

The mighty Calumet & Hecla played an unwitting and unintentional part in this wave of speculation. The C. & H. stock, hovering around $1,000 a share, was reality to all the hopes of five-and-ten-cent investors. Down in their hearts, they knew that some day the "coppers" of their choice would be worth a thousand dollars, too.

Certainly it is significant that the *Copper Handbook* for 1907 lists more than thirty different copper mining corporations with the name Hecla or Calumet worked into their corporate title.

Surely it is more than coincidence that there was a Calumet Mining Company and a Calumet Copper Company in Colorado, a Calumet Copper Mining Company in the state of Washington, and a Hecla Mining Company in Wyoming. And what do you suppose those Missourians had in mind when they set up a company called the Calumet, Hecla & Muscatine Mining Company?

Copper Country sages, telling extravagant tales of speculation which rifled Keweenaw pocketbooks, are careful to add that not all the blue chips were wagered by brokers' customers. Sometimes a board of directors did the scattering, inspired by the fatal bromide, "Looks like a second Calumet & Hecla."

Take, for example, the costly case of the Mendota Mining Company,* which set out to be a second C. & H. in reverse order.

Customarily, several years are needed to prove up a copper mine. Your geologists explore the property, direct the sinking of test shafts, estimate the probable extent of your ore body, all the while hoping they are guessing right. If your optimism survives this period, you sink a permanent shaft. Then, when your rock is coming out, you begin spending money on a surface plant. Only after the rock house fills with vein rock does a sensible mining company begin building its machine shops, pump house, stamp mill, and smelter. And even then the board of directors prays nightly that the ore body will hold out long enough to repay the investment and leave enough over for dividends.

But the Mendota's directors had no patience with such cautious planning. They proposed to eliminate a year or two from this tedious procedure by putting down their shaft and erecting their stamp mill and smelter simultaneously. At a time when their shaft was still only a shallow beginning, the company erected the largest stamp mill on the range, costing $125,000, and built a $43,000 smelter. Then, in order to be ready to handle the huge quantities of copper which they confidently expected their mine would soon produce, another $100,000 was spent in dredging a

* Actually this fiasco was due to the accumulated misadventures of Horace Greeley's Pennsylvania, the Delaware, and a number of other mining companies of which the Mendota was the last. The expenditures were made over a period of ten years during the fifties and sixties, but the motives and result were essentially as related.

channel from the big lake into Lac La Belle. Above ground, the Mendota Mine was already a small-sized Calumet & Hecla. A second Red Jacket was even on its way to realization after $14,000 worth of lots were sold in the newborn village of Mendota.

The flaw in the company's reasoning was, of course, that it needed, first of all, a second Calumet conglomerate lode beneath its property. As soon as it became evident that this all-important vein was lacking, the company collapsed, expensively but conclusively.

Today, tourists are taken to see the ruins of the smelter and the crumbling foundations of the stamp mill. The stamp sand makes an ideal beach. It is very pleasant to sit beside a little waterfall which beats upon the rocks near by and look out on the aptly named Lac La Belle. You can't help wondering at the thinking that led to such a waste of effort. Your guide seems to answer as he suggests: "They must have been a crazy lot in the 1860's. Imagine spending all that money without first finding whether or not they had a mine!"

The damn foolishness on the shores of Lac La Belle, however, proves as inconsequential as the bankruptcy of a roadside hot-dog stand when it is compared with a more recent fiasco. Where the Mendota optimism didn't involve more than a few hundred thousand dollars, the Arcadian Consolidated Copper Company spent *seven million dollars* or thereabouts, trying to become a second Calumet & Hecla—in reverse.

The rise and fall of Arcadian seems baffling, when you first examine the important names behind the company. The Arcadian leaders were no 1860-hopefuls, spurred on by fifty-five-cent, Civil War copper and possibly misled by the not yet mature science of geology. They were all top-flight, twentieth century copper men or financiers with the most expert, modern scientific guidance at their disposal.

Nate Leopold, for instance, had been around the Copper Country for nearly a half-century before he became general manager of Arcadian. The board of directors included William Paine, Sidney Chase, and the two Burrages, Albert and Charles—all of them eastern capitalists who had earned a reputation for knowing their "coppers." The good judgment of these men, however, was more

than likely impaired by the grandiose viewpoint of their companions, Henry Rogers and William Rockefeller.

Arcadian, in fact, was a close relative of the ill conceived Amalgamated Copper Company. Rogers and Rockefeller, having made fortunes by exploiting another gift of nature, saw no reason why their methods wouldn't work with red metal in the Copper Country. And those innocent bystanders, the investing public, asking no more than that Standard Oil was behind Arcadian, reached under their mattresses and hurried to buy Arcadian shares.

The Arcadian Copper Company was formed in 1899 and, because of its whispered backing, had no trouble raising two and a half million dollars by selling stock. The company purchased four thousand acres of land which included the locations of six old mines—all of them having already failed a time or two on their own. Then it began a building program the like of which the Copper Country had never seen before. More than one hundred and fifty homes were constructed, which together with store and office buildings created the two-street, half-mile-long town of Arcadia within a month. The company laid a two-mile pipe line of nine-inch pipe to feed pumps so large that they might be the pride of the largest metropolis on earth today. The stamp mill, the blacksmith shop, the boilerhouse, and other surface buildings were equally impressive. They were built of steel and stone, strong enough to resist centuries of Lake Superior winters. During one period eleven hundred men were on the Arcadian pay roll, and another five hundred on the pay rolls of contractors who were constructing the buildings.

As the *Copper Handbook* for 1900 says, "Work was begun on a scale never before seen at any mine in this field . . . the amount of work done in the space of eight months is without parallel in the history of copper mining!"

For a time it appeared that the catch phrase of the copper range would have to be altered: the Calumet & Hecla might come to be known as a "second Arcadian."

During such a whirl of activity one wonders that General Manager Nate Leopold found time to look for copper beneath his magnificent surface plant. He did, though, and searched for vein rock in characteristic Arcadian style. *Seven separate shafts were*

begun simultaneously! Until then, only the Calumet & Hecla had ever opened so long a stretch of copper bearing lode. And C. & H. had spent thirty years to accomplish what Arcadian was attempting in one, all-out shaft sinking.

In one period of thirty days, more than eighteen hundred feet of underground work was completed. As hard-rock mining goes, this is a prodigious amount of digging. With three shifts working feverishly, it wasn't long before Leopold ordered the skips lowered and filled with presumably rich amygdaloidal rock. One of the finest surface plants ever built stood above ground ready to make it into unheard-of amounts of copper ingot. The bill, to date, was $2,000,000!

By this time, the rest of the country knew all about the frantic goings-on at the Arcadian location. Speculative folk with a yen for "coppers" bought Arcadian recklessly, and one enthusiastic investor of record purchased 2,500 shares at the purely artificial price of $75 per share. This optimist invested $187,500 in a mine which hadn't yet made a pound of copper.

In 1904, you could own a share of Arcadian for twenty-five cents! During the previous year the company was forced to admit that it hadn't any copper to speak of beneath its magnificent buildings. In the interim, through reorganizations, assessments, and costly resurrections, the Arcadian had borrowed just short of seven million dollars from its host of hopeful stockholders. This was quite a stake, even by Standard Oil concepts, and all concerned agreed they'd had enough.

The expensive machinery was sold to meet current debts. And all the massive buildings were torn down. The village of Arcadia, like its counterpart in Goldsmith's poem, literally disappeared. Today, about a hundred Finnish farmers live in the vicinity and call the old location Paavola. A touring motorist might find out how to reach Paavola, but even the Copper Country Vacationist League seems to have forgotten all about Arcadia.

Just a few years ago, the Arcadian's mineral lands were put up at a sheriff's sale and auctioned off to pay long-neglected taxes. A Copper Country merchant was the successful bidder, and he paid the sheriff of Houghton County $13,600 to own those expensive four thousand acres with their record of failure dating from

1864. The merchant hasn't said what he intends to do with the property. But if he is a true Copper Country citizen his plans are crystal-clear. Some day he will put down a shaft, for somewhere beneath his four thousand acres lies another Calumet conglomerate lode.

CHAPTER XVII

FRESH-WATER SEAPORTS

SOMEHOW, THE BARDS and minstrels of American waterways have neglected the Great Cold Lake. Nearly every mile of the Father of Waters' winding thousands has been celebrated in song and ballad. But minnesingers have overlooked the music of Superior's crashing waters; rhymesters have ignored the sonnets the water-bound lives of Keweenawans might have written for them.

American folklore has been shortsighted. Early life on the copper range was as wrapped in water as that of any up-river Mississippi settlement. Watercraft carried away the fruits of Copper Country labor and brought back the ingredients of living. The range, until the railroads finally found it, was as dependent upon water transportation as some mid-Pacific island. Its people thought of themselves as castaways during the six or eight months of winter (when navigation ceased entirely) and welcomed the first boat of spring as though it carried a rescue party.

It needs a Robert Service to describe the celebration inspired by the arrival of that first boat of the year. It was the explosion of a pent-up people—noisy, raucous, and violent.

Days before the boat was due, a lookout was sent to the top of the Quincy shaft house, high on the hill above Hancock. He pointed a huge brass telescope eastward, and the instant he made out the top masts of the first vessel he shouted the welcome news down to the rock-bin workers below. A few seconds later the Quincy engineer tied down the boilerhouse whistle, and soon the whistles of all the mining locations within hearing added their piercing shrieks to the unholy chorus. Two cannon, loaded and primed for days, stood on the bluff above Houghton. Their throaty roars completed the general pandemonium.

The resultant din traveled down the shafts and along the drifts underground, and the miners tumbled over one another to get

to the ladders and scramble to the surface. Fishermen out on the big lake hurriedly pulled up their gill nets and rowed for shore. Even the most phlegmatic Scandinavian farmer unhitched his plow, threw a leg over his plow horse, and galloped off for Portage Lake.

The little steamer *Mineral Rock*, Captain John McKay, Master, was the first boat through in 1863. She docked at Houghton on May 9th, a week earlier than expected and so ever the more welcome. The editor of the Portage Lake *Gazette* front-paged the occasion:

Scarcely had the "Old Rock" got around the point than the stampede from the mines commenced. Women with baskets besieged the ship stores for eggs, oranges and anything fresh before the boat came anywhere near the dock. When she does come, her crew might as well undertake to shell Fort Moultrie as to unload any of the freight, for the crowd fills the cabins, blocks up the gangways and takes 'tween decks by storm.

Crowds of men, some in pants and digging shirts, some in biled Sunday shirts and some with pants but no shirts at all, come running with breathless anxiety, tumbling over scores of women and children who are also making their way thither.

Decrepit old men and invalids who have not left their beds since the close of navigation come hobbling along to have a peep at the wondrous sight, while timid young ladies are observing the formidable spectacle through spy glasses resting on the shoulders of gallant young gents.

Fast young men hurry down to the ship's bar and demonstrate their joy with sundry glasses of lager and three-star.

No one discounts the importance of water to the Copper Country. But when you consider just *how* important it was, you find yourself wandering off in a reverie of "if" and "suppose." And the more you think of the matter the more it becomes a variant of "Which came first—the chicken or the egg?"

Surely men would eventually have found the Keweenaw's virgin copper even had its copper-bearing rock lain in the middle of the Sahara. But how much longer do you suppose the Peninsula would have remained an enigma if Douglass Houghton couldn't have sailed the Great Lakes to reach it? Or how many more years

would Ranse Shelden's beloved amygdaloids gone undeveloped, if there hadn't been a Portage Lake to furnish water to stamp them and water to float the ingot to market? The Copper Country supplied the North, nearly singlehanded, with its vital wartime copper. If it hadn't been for the amygdaloids, Grant would certainly have had fewer bronze cannon and the Union might . . .

There is little doubt that Lake Superior enabled the Copper Country to skip generations in mining history. Water carried food, coal and floated heavy mining machinery to the Michigan copper range while the great western copper deposits still lay in the midst of wilderness. Superior peopled an isolated section of a state which was years in growing up to it. Eastbound vessels carried off copper ingot to market, although the Copper Country differed from its sister Iron Country in its dependence on water to carry away its products. Water was the all-important link between the mines and the blast furnaces in the steel-making chain. Copper ingot doesn't bulk so large, and the range could doubtless have carried it to market without water. Nevertheless, in its first decades, the copper range lived like a seaport and turned to the waters of Lake Superior as any tidewater town turns to the Atlantic.

Father Claude Allouez, most authorities agree, was the first white man to set foot on the peninsula in 1667 and was martyred for his venturesomeness. He arrived by birch-bark canoe, as did the fur traders who followed in his wake. The latter soon adopted the bateau and Mackinaw boat, as they needed more roomy vessels. The bateau was a clumsy, flat-bottomed vessel, usually rowed, but occasionally fitted with a rude sail. The Mackinaw boat was a better and safer craft rigged with a square sail and built along skiff lines. Both were too heavy for portaging, but neither was too good a sailer; in fact, not a few early copper prospectors lost their lives when these craft foundered in a Superior storm.

Real navigation on Superior began with the fur-trading schooners. The American, Hudson's Bay, and British North-West fur companies sailed the *Discovery, Invincible, Otter, Mink,* and *Recovery* on Superior about 1830. All were tiny vessels of twenty to one hundred tons burden. Most of them seem to have been

still in service when the copper rush came in 1843 and had a share in carrying prospectors between the Sault and the Keweenaw Peninsula.

The largest of these fur-trading schooners to figure in the copper rush was the *John Jacob Astor*. The American Fur Company had G. W. Jones get out her timbers and planks at Charleston, Ohio, and the schooner was put together at the Sault. Captain Charles Stannard took her out on her maiden voyage on August 17, 1835, and discovered the reef still designated by his name on Great Lakes navigation charts. The *Astor* weighed 112 tons and was just getting well started in the new copper trade when she blew ashore in Copper Harbor on September 12, 1843. She was loaded with winter food supplies for Fort Wilkins and the boom town of Copper Harbor. Enough of her cargo was salvaged to pull the Harbor through the winter, but the Copper Country had in this mishap only the first of a long series of inopportune wrecks.

As the rush of copper seekers demanded transportation, shipping tycoons of the lower lakes hastily sent their vessels north. During the middle forties, the *Chippewa, Florence, Algonquin, Swallow, Merchant, Uncle Tom,* and *Fur Trader* were taken from service on the lesser lakes and put into the Lake Superior copper trade. Few of these were retired by old age; most ended their days in a violent Superior storm or an equally violent boiler explosion. The ninety-ton *Merchant,* for example, went down during a sudden squall with Captain Bob Moore, his crew of six, and eight copper prospectors. No trace of the *Merchant* was ever found.

Late in 1845, the propeller *Independence* was launched above the Sault and so became the first steam-propelled vessel to navigate Lake Superior. On this historic voyage she steamed to the other end of the lake and nearly frightened the natives of La Pointe on the Apostle Islands out of their wits with triumphant blasts of her whistle. The citizens of Ontonagon greeted her with gunfire and cheers as she dropped anchor briefly to land a few items of freight. To win her blue ribbon, the *Independence* had to win a race probably unparalleled in marine history.

Lakes Superior and Huron are separated by the waters of the

St. Mary's River, along a mile of which are boiling, unnavigable waters. In those early days the bigger vessels from the lower lakes sailed as far up the river as they dared and then took to shore. From there they were drawn across the portage on rollers, inched forward bit by bit with a capstan much as a house is moved today. The *Ocean,* the *Napoleon,* the *Merchant,* and the *Independence,* all began the dry-land voyage across the Portage towards the end of summer, 1845.

The *Ocean* was a thirty-five-ton sloop which had sailed the lower lakes under another name and was known amongst Great Lake sailors as a jinx ship, having twice capsized disastrously. The owners rebuilt her, altered her lines somewhat, and fitted her with engines, if for no other reason than to be able to sign on a crew. The *Merchant* was owned by the same Detroit firm of Dorr & Webb, and the crews of both, it is said, decried their owners as the meanest on inland waters.

At any rate, the *Independence,* though last to begin the overland voyage, soon rolled past the *Napoleon* and moved up abreast of the *Ocean* and the *Merchant.* Perhaps the crews of the latter vessels wanted to belong to the winning team. Whatever their motive, the tars of all three applied in a body to Captain Albert Averill, Jr., master of the *Independence.* Now, with more than enough willing hands, Averill succeeded in launching his ship for her immortal voyage that same year. Second, third, and fourth prizes couldn't be awarded until next spring.

It is regrettable to report that, despite her blue-ribbon status, the *Independence* was definitely a bastard ship, one of the most illegitimate examples of marine engineering of all the outlandish converted sailing vessels in the copper trade.

She was built in 1843, in the Chicago River hard by the present Michigan Avenue bridge. Her builder, Albert J. Averill, Sr., planned her as a grain-carrying vessel sturdy enough to sail from Chicago to Europe without transshipping her cargo, which was then the custom. As a schooner, her lines were not unpleasing. She was something like 280 tons, 150 feet long, with a beam of 26 feet, and was rigged with foresail and jibs. Unfortunately, Averill couldn't seem to decide whether steam or sail should predominate; and the *Independence* suffered from his indecision. On

her trial run, the rotary engines could drive her only four knots an hour. Moreover, her massive propellers were such huge affairs that they amounted to sea anchors. It was estimated, in fact, that, had the ship carried no grain and filled every cubic inch of her cargo space with coal, she still could never have got much more than halfway across the Atlantic.

The demand for ships for the copper trade was naturally a godsend to Averill. He put his son in command, hired an expert Glasgow engineer, Tom Ritchie, and sent the *Independence* northward. The copper hunters were in no position to complain about the transportation service, in fact took up a purse for Ritchie when he pushed the misbegotten steamer up to six knots an hour. Averill got his investment back several times over before the steamer blew up off the Sault in 1851.

Her untimely end was typical and meant, as was so often the case, a monotonous winter diet for the range. She was loaded with the winter food supply for Ontonagon and the mines near by. The citizens regretted that three of its crew were blown to pieces and a number of prospector-passengers fatally scalded but cursed louder at the luck which left them with nothing but salt pork and dried whitefish for eight months.

Of all the vessels which scurried back and forth between the Sault and the Keweenaw, the favorite of the copper trade was easily the turtle-shaped side-wheeler *Julia Palmer*. An early writer said, with real fondness, that she resembled a squat, middle-aged mother duck. While her beginnings were nearly as illegitimate as those of the *Independence,* her passengers seem to have loved her as though she were a luxury liner. She was built at Buffalo as a full-rigged five-master, one of the three full-rigged ships to sail the Great Lakes. The *Julia Palmer* (named for the wife of her builder) plied the lower lakes until the copper rush, and was hauled across the Sault Portage in 1846. Then she was fitted with engines and converted into a side-wheeler. Naturally her womanly lines weren't improved by tacking wheel housings on her hips; but she could do ten knots in reasonable weather, and this fleetness made her seem an ocean greyhound compared with such trudging vessels as the *Independence.*

It was the lavish luxury of her cabins, however, which made the

Julia Palmer the wonder of the copper trade. Not even moneyed Bostonians had traveled amidst more extravagant splendor on the Atlantic. The furnishings and décor of the more expensive cabins were imported directly from France. Ornate mirrors, rich brocades, and silken carpets set off the spindly French-style furniture. Canopied bedsteads stood in the center of the elaborately decorated rooms and were such complicated triumphs of French art as to overawe the most cosmopolitan occupant. Eastern money men and their ladies descended from this lavishness to nightly musicales held in the main saloon. On the main deck was an elegant saloon reserved exclusively for ladies although it is certain that some of its occupants were entitled to no such designation. On the upper deck, passengers dined in an expansive dining saloon oppressively decorated; and, fore and aft, were individual staterooms. Below decks were steerage quarters for mere miners or impecunious prospectors.

The life of the magnificent vessel, however, was as short as that of most of her more plebeian contemporaries. In 1847, only a year after her launching on Superior, she blew up off the mouth of the Big Two Hearted River not far from the Sault, taking Captain John Wood and several passengers down with her; but with her capacity of three hundred and her breath-taking speed, the *Julia Palmer* had carried so many passengers who remembered her ineffable splendor that her saga remains among the most lasting of Copper Country legends.

In a water-bound land like the Keweenaw Peninsula, the busiest centers of activity were naturally also the busiest ports. Copper Harbor, Eagle Harbor, and Ontonagon were the Copper Country's first settlements because they were its handiest ports. After Ranse Shelden had seen to it that Portage Entry was dredged free of sand bars, the twin towns of Houghton and Hancock became the great copper ports.

Travelers landing at the Twin H.'s before that time cursed and blasphemed these sand bars. They were responsible for the most miserable part of the water journey even when the traveler looked back on Superior storms and primitive accommodations. Lake vessels discharged freight and passengers upon the bars, where they were transshipped to scows for the trip across Portage

Calumet & Hecla Library

Loading copper ingot from Isle Royale Mine on steamer *Juniata* at Houghton

Calumet & Hecla Consolidated Copper Company

Whole forests of timber like the huge "sticks" shown (below) went underground to support the roof or "hanging wall" of Keweenaw mines—another billion feet was cut into "lags and stulls" or top-pieces. Men are trammers loading conglomerate into tram cars, 34th level, Number Five Shaft, Tamarack Mine.

Roy W. Drier Collection

Portage Lake and the thriving, fresh-water seaport of Houghton, in 1881. Partisan artist chose to ignore the more populous, rival city of Hancock which actually lies in lower foreground. The Isle Royale, first mine in Portage district at top, to the right. Energetically smoking chimneys along water front are stamp-mills.

Lake to Houghton or Hancock. The travelers landing at the Entry were treated to a dismal first sight of the Copper Country.

A most untidy man named Pete Edgerton ran a super-low-grade log hotel which stood on one of the sand bars. Out of doors, the mosquitoes and black flies generally broke their own records for persistence. Indoors, the stink of forty-rod, Peerless Cut Plug, and unwashed prospectors struck the incomer like a fall of traprock. The copper pilgrims, however, put up with Pete and his miserable hotel whether they liked it or not. Tugboat skippers came to rescue them when they felt in the mood—not a day before.

Probably the most unforgettable of these individualistic tugboat captains was Jim Bendry, with an ungainly vessel named the *Pratt* that he had metamorphosed from a sunken predecessor. Jim had come to the Copper Country aboard the *Independence* on her historic voyage, and detractors said that he adopted that steamer's title as his personal motto. Not that Jim wasn't a willing man; it was just that the season of navigation was too short, the rush of passengers and freight too demanding, and human endurance so limited. His critics, however, thought that freight rates of a flat $4 a ton, with passenger fares in proportion, were a little arbitrary.

Truth was that Jim had all he could do during the shipping season, in fact ran the *Pratt* twenty-four hours a day. All season long, his only sleep was cat naps at the wheel. In moments of crisis or during periods which demanded wakefulness, Jim depended on reviving snorts from a jug. Sometimes exhaustion overpowered Bendry completely, and then, historians say, the course of the *Pratt* bore resemblance to a spiral with a string of towing scows winding along in her train. Every few days the *Pratt* and her tandem would pile up on the shore. The passengers sat on the cargo in the open scows, unprotected from rain, blistering sun, or the chill of Superior night, all the while deluged with a continuous shower of sparks from the wood-burning boilers. They were apt to consider these discomforts as minor annoyances, however, once they discovered the nature of Jim Bendry's cargo.

The tough Keweenaw rock needed a great deal of black powder to blast it apart, and Bendry's most remunerative trade was

lightering explosives across Portage Lake. One can imagine just how terrifying it could be to sit helpless as Jim wound his serpentine course up the lake while a fireworks display of sparks poured down upon the powder kegs. Jim had a stock answer for passengers who complained: "Ain't never blowed up yet."

Even when the travelers completed their sometimes perilous and invariably tedious voyage to Houghton or Hancock and settled down in those communities as strictly dry-land citizens, they found that their troubles with mariners were not over. Those who lived in Hancock, at times, wanted to cross the lake to Houghton, and vice versa. In either case they found themselves inextricably involved in the monster thirst of Sam Eales.

Sam had the ferryboat monopoly between the two towns, although it wouldn't be accurate to say that he conducted a ferry service. The schedule of Sam's single boat, the *Lizzie Sutton,* was entirely dependent on his thirst: the boats ran often when he thirsted, and not at all when he was sated. Ranse Shelden and other leading citizens of Houghton and Hancock deplored Sam's failing loudly, but it got them no better service. Finally, exasperated beyond endurance, they offered to buy him out. Sam was agreeable, but when the time came to draw up articles of sale, he refused a flat purchase price, insisting instead that he be kept in food, lodging, clothing, and a not inconsiderable amount of drinking money for the rest of his life. It seemed to be a bargain, for Sam was burning the candle at both ends and in the middle, and his life expectation was brief. But, released from the cares of ferryboating, Sam roystered and throve mightily. He lived such a long and sinful life that the citizens found it necessary to increase the ferry fare in order to recondition the *Lizzie Sutton.* She had to be kept in active service to provide Sam Eales with his annual stipend.

When the St. Mary's Canal was opened to navigation in 1855, the Copper Country saw itself freed at last from the threat of starvation that so often made its winters hungry as well as lonely. Now every one of the great fleet of vessels plying the lower Great Lakes could sail all the way to the copper ports. There was no longer need to transship cargoes across the Sault Portage and into the holds of the handful of Lake Superior boats. The Superior

flotilla had always done its best to bring the range its winter bread and butter, but the season was short, the number of vessels inadequate, and the tonnage regularly depleted by storms and boiler explosions. When the Soo locks were first opened, the range thought it had a new super-market with delivery guaranteed.

Unfortunately, captains on the lower lakes knew Superior only by reputation—a bad one! Skippers who were as doughty as the next on the familiar waters of Erie or Huron, scared easily on Lake Superior. That first year, as the fall storms increased, many of them dumped their cargoes at the closest ports, turned tail, and ran for home.

One, the master of the *Northern Lights,* out of Detroit, jettisoned all the winter supplies for Ontonagon on the shores within Eagle Harbor. Indignant citizens sent a schooner to bring back what it could carry, but it was wrecked while leaving the Harbor. For the rest of the winter, Ontonagon, then the largest town on Lake Superior, lived from week to week as sleighs completed the 150-mile round trip with what was left of the abandoned cargo.

This was the last of the Copper Country's hungry winters. Superior no longer came between the range and its edibles, but she was still far from gentle in her treatment of the vessels which bounced upon her bosom. Nearly every year the copper trade saw shipwreck and disaster. The propellers *Monticello* and *Manhattan* collided during one stormy spring, and ten people from Houghton died that night. In 1863, the *Sunbeam* foundered between Eagle River and Ontonagon, and twenty-five Keweenawans drowned. A few years later the propeller *Manistee* went down taking thirty-eight more along with her. The list is as endless as it is tragic, the cost in dollars and tonnage staggering.

The *Manistee* disaster introduced what was to be the queerest fishing on Lake Superior. She was loaded with barrels of flour and whisky and great quantities of eggs, butter, and cheese from the Minnesota dairy region. As she broke up she cast her crated cargo on the waters, and the miners from Portage Lake hurried to fish out the plunder. Sunshine cake, cheese rarebits, and mass drinking bouts were part of the *Manistee's* funeral rites. Another time, eleven hundred crates of chocolates were angled out of Superior, and thankful citizens of Eagle Harbor once collected

almost a shipload of bacon washed upon their shores. A man at Eagle River owns an outhouse which amounts to a show place, for it was the wheelhouse of passing steamer which obligingly broke up just off his property.

Accounts of Superior's occasional munificence, however, were generally omitted from letters European-born miners wrote home to brothers, uncles, and cousins. More often they dwelt on the dangers of the last leg of the voyage to Michigan. The Cousin Jacks, the Irish, and the Germans told of the steamer *Pewabic,* which went down in 1865 with forty passengers and $40,000 worth of ingot from the Quincy Mine. The Scandinavians, Italians, Austrians, and Poles who migrated later had no more promising news for families left behind in the Old Country until passage money could be saved.

But stories of the good life the Keweenaw offered outweighed the terrors of the storm-bound passage on Superior. Continental Europe came to the Copper Country in droves, even though the immigrants shuddered as they boarded yet another boat at Buffalo.

CHAPTER XVIII

GRAND CALLITHUMPIAN

RESPLENDENT IN THEIR new uniforms, which were uniforms only by virtue of the red cloth strips the good Cousin Jennies had basted on Sunday trousers, the Central Mine Silver Cornet Band stood awaiting Josiah Polkingthorne's signal. A moment later, "The Battle Cry of Freedom" resounded against the high-piled greenstone back of Central Village. The strains reached the old Cliff location and a few notes even scaled the bluff and floated down to Eagle River. The tune could hardly be called melodious. But who quibbles over the harmony of a tocsin?

Thirty miles to the south, on the heights above Portage Lake, the Quincy Mine Silver Cornet Band, Tim Flaherty directing, tuned up for "Marching Through Georgia." The Quincy Hibernians made a monstrous racket and purposely. A block away the brass band of the Mistletoe Lodge, Sons of St. George, was blaring the "Battle Hymn of the Republic" and it would never do to have it said that the Cornish could out-toot the Irish.

Midway between these gatherings, to the east in Stamptown (a series of settlements around the stamp mills known officially as Lake Linden), other groups were forming. The bands here were neither so large nor so loud, but more men fell into line behind them. Some uniformed, some beribboned, the groups here were fraternal orders or societies of nationals. There were knots of Croats, Scandinavians, Italians, and even a few French Canadians. Those who didn't join countrymen fell in with the Odd Fellows, the Masons, or the Woodmen of the World.

Elsewhere on the Keweenaw Peninsula, at other mining locations, similar groups had gathered and soon the roads to town carried unintended parades of family buggies and bone-shaking delivery wagons jam-packed with men, women, and children dressed in Sunday best. The bands, the marchers, and the vehicles

converged on Red Jacket like an army, engulfing the village in the noisy excitement of the Copper Country's annual Callithump.

No one seems to know where the name Callithump or Callithumpian came from, but old-timers delight in telling what it signified.

"It was *our* Fourth of July celebration," they explain with a wave of the hand that somehow dismisses all others, "and you should have seen the parade. Folks came from as far as L'Anse and Ironwood to march in the Grand Callithumpian. You never saw so many Uncle Sams and Cinderellas and little girls dressed up like fairies. It sure was a sight! One year we had close to thirty floats. That was the last year Mr. Agassiz—the old gentleman, that is—gave out the prizes himself."

The Grand Callithumpian Parade always wound up in Calumet, where a reviewing stand, erected by Calumet & Hecla carpenters, gave partial shelter to visiting notables from the sudden, damp fogs that sometimes roll in from the Big Lake on the sunniest July days. On these great occasions Alexander Agassiz (later his son, Rodolphe or a second-generation Shaw) sat in the reviewing stand and smiled with almost feudal paternalism on the exuberant crowds. Thirty-two nationalities stood before them and, in as many tongues, cheered for America, the Keweenaw, and the Fourth of July.

The hush that followed the company band's rendition of "The Star-Spangled Banner" must have stirred even the Senator from Washington, imported for the speech-making. Though this was the solid, solvent 1900's, many who mined Michigan's copper rock were still learning to *talk American.* But every man among them *thought American.* From the bottom of their hearts, they celebrated the anniversary of the Declaration of Independence.

If you should happen to pass through Houghton, Michigan, during a not too distant summer, you may still find an old gaffer with a name something like Moynahan (he'd forgotten his "uppers" the morning we talked with him) sunning himself in one of the line of chairs outside the Douglass House. He aims his tobacco poorly, but it's worth a spot of juice to hear his version of the polyglot people of the Keweenaw.

He must be deep in his eighties, and he was born on the Peninsula, up at the old Copper Falls Mine; but he claims, "There ain't no natives on the range."

"We're all foreigners up here," he says. "Sure, I was born here; but my folks come from Ireland, and they stayed Irish until the day we buried the two of them. Them Swedes, them Austrians and Polish, they're all the same way. My folks took out their papers, and I voted for every President since Hayes. What I mean, we're different from those people downstate. Hell's fire, half them fellows in Lansing are ashamed their folks come from Europe. Look at the way they change their names. You don't see that stuff on the range. Sure we're Americans, and none prouder of it; but, by Jeeze, I always say I'm from the Upper Peninsula! We ain't the same as those stuck-ups downstate. That's why I say we're foreigners.

"We got more different people up here than you can shake a stick at, but you should see how it used to be. People from every single country in Europe. Why, C. & H. had a fellow from Brazil and an Arab fellow. In the seventies, I can remember all them Swedes and Scandinavians coming on the boats from Buffalo. Next it was the Germans, and then Eyetalians. Every one of them was sick of the way kings and princes spent tax money right and left. Say, we had some Croat neighbors that eat nothing but turnips all winter just so they could pay taxes. My daughter's married to one of the sons. He's a lawyer down to Detroit now, but they come back every summer. Like I always say, when you're born on the range, that's where you belong.

"How'd so many foreigners come here? Well, they say that was the mine companies' idea. They figured miners which jabber like monkeys and can't speak a word of English can't get together and make trouble. Pretty cute, eh?"

Little of this old life, colored by a mixture of races and tongues, is left on the range today; but you can still see traces of it in the abandoned houses clustered around the Central Mine, which was once known as the Keweenaw's Duchy of Cornwall.

The Cornish were the first "foreigners" to discover Michigan copper. They came in the late forties and early fifties, at the very beginning of the rush, and found the Keweenaw much the

same as the country they had left. Cornwall's surface soil is incapable of feeding its inhabitants, but from the time of the Romans onward, the deep subsoil fed them with wages from tin and copper "bals." But even the good Cornish lodes couldn't last forever, and they were meager indeed when America providentially opened up its first boom mining district. The Cornishman's toast, "To fish, tin, and copper," was almost as apt in Michigan as it had been at home.

The Central Mine, opened in 1854 on one of the richest fissure veins on the range, was so immediately and phenomenally successful that incoming Cornish headed for it like homing pigeons. Cousins, brothers, sons, and uncles followed the first comers, and the superintendent hired them all. Central, in fact, was so thoroughly Cornish that a native-born American visitor often wished he'd brought an interpreter with him. Cornish crake is founded on the English language, but with such picturesque adaptions that it can sound like a foreign tongue. A Cousin Jack miner might "feel some foolish" if he didn't "beat" his hand drill "brave and true" into the "keenly" lodes underground in the "wheal."

The Cornish who set up their scanty household goods at Central were old-time miners, and most of them had had their first taste of life underground at the age of five or six. Cornish wages were notoriously low, and Cornishmen prolific; even the little tots helped above ground at the Cornish bals, and the older children often worked sixteen hours a day in the mines. All work and no play didn't, in this case, make Jack a dull boy but *did* make him an excellent miner. The Cousin Jack was rightfully proud of his "eye for ore." He invariably worked on "contract," which meant that he received a set price for mining a designated number of fathoms of rock instead of weekly wages. When the rock was tough, his pay was small, but when the going was easier he and his maid ate roast beef. Steady as your Cornishman is, he likes a bit of spice and gamble with his daily bread.

For the same reason, the Cornish preferred hell-fire and brimstone Methodism to the formalized religion of the Church of England. No chanting and ceremonial rites for the Cousin Jack. Whenever original ideas of the hereafter occurred, he liked to stand right up in church and air them. He was highly articulate,

if uneducated, and took turns with fellow Wesleyans in preaching the weekly sermons. In fact, Methodist churches had no regular preachers during the early days on the range; competition, it was felt, made for livelier sermons.

Next to talking, the Cousin Jack loved to sing. Few had formal training, but volume was considered compensative to lack of polish. The Cornishmen sang on their way to work and blended their song into a chorus as the man car took them down the shaft. It must have been quite an experience to hear the strains of "Rock of Ages" gradually fade as the singers were lowered underground. And the singing at a Central Mine funeral could move a man with a heart of stone. At least, so old-timers say. The pallbearers carried the coffin between them, slung on strips of cloth; and as the cortège left the church the men began the dolorous words of "Nearer, My God, to Thee" and continued through the verses until they reached the grave. Until you have heard Cornish singers, their rich, natural baritones echoing from the bluff back of Central, and seen them stand bowed before an open grave in a mine cemetery, you can't know how truly beautiful and dignified the burial service can be.

Hymn singing at Cornish mine locations such as Central wasn't reserved for Sundays and funerals: it was a sport in the competitive sense. The community took as much pride in its choir as in its powerful wrestlers or skillful hammer and drill team. Choirs traveled from one location to another to hold singing meets, and at least once a year all the choirs on the range met at the First Methodist Church of Calumet to carol for the championship. The rivalry between Yale and Harvard is inconsequential alongside the bitter partisanship of the supporters of Copper County choirs.

The immortal legend of Dick Buller * grew up around these singing contests. Dick has a status on the copper range comparable to that of Paul Bunyan in the timber country save that Dick's incredible feats had to do largely with his mighty basso

* Dick Buller is the more or less autobiographical hero of a most diverting series of tales set down by Alfred Nicholls. Mr. Nicholls was brought up at Central Mine and later became superintendent of schools at Osceola. For years the *Portage Lake Mining Gazette* published double-page accounts of Dick Buller's various achievements, and Mr. Nicholls' story-telling has been so convincing that the present generation insists that Dick was a real person.

voice. He was a Central miner, and it is said that the volume of his deep bass was so great it could penetrate ten levels under ground and travel ten or fifteen miles along the surface.

One Sunday morning when Dick was in especially fine vocal fettle he frightened the sinners at the Phoenix mine, eight miles away, out of their wits. The Phoenix preacher had just concluded a vigorous sermon on the certainty of eternal damnation for beer drinkers and backsliders when Dick commenced the bass solo in that stirring hymn "Deliverance." His voice carried the entire eight miles, gaining, if anything, in volume. " 'Twas like a multitude singing as one man, coming out of the sky." The sinners at Phoenix "looked each other in the eye, and the superstitious among them fell to the floor like dead men. Some said it must be the judgment day and the angel Gabriel be up on one of the shaft houses singing out a warning."

The Phoenix preacher had heard this powerful voice at close range and soothed his parishioners. "Rest your souls, my people," he said. "Be not afraid. 'Tis the voice of Dick Buller. Only one man, one voice could so fill this terrestrial ball!"

Buller's greatest achievement was in vanquishing a notorious braggart from Red Jacket, who fancied himself a pretty fair singer. One Saturday night the boaster dropped in a Helltown bar, close by Central, and started casting aspersions on the community champion. Dick's friends could stand the bragging only so long; soon they went after Dick, and the contest of contests was on.

"Well, friend," said Dick peaceably, "let's hear what you can do."

The Red Jacket basso obliged by singing that difficult Methodist favorite "Old Sexton," and even Dick had to admit he did a "brave and tidy job." Then Dick countered with his specialty, "Down, Down, Down Among the Dead Men." The first "down" was voiced deep in the bass register, and each successive "down" was nearly an octave lower, as the "Beware" in that other bass favorite "Asleep in the Deep." By the time Dick boomed out that mighty final "down," the tables were vibrating, the glassware dancing upon the bar, and the building shaking as though in a midwinter storm. The braggart's eyes were glassy with amaze-

ment, and he stood like some rustic oaf who had challenged a stranger to a fight only to find his opponent the heavyweight champion of the world.

Tales of Dick Buller's superhuman vocal achievements run on at length, and are exceeded only by the stories of his feats underground. Cousin Jacks enjoyed recounting Buller's mining ability only second to relating their own. Not that they weren't justified, for the Cousin Jacks were easily the best miners on the range.

So lusty a worker and so great a talker and singer as the Cornishman naturally gave a good deal of attention to food. Sunday breakfast was the peak of the Cousin Jack's dietary week, and then his good Cousin Jennie spread the table with favorite Cornish dishes. The meal started with mush, drowned in the inimitable Cornish scalded cream. Seedy buns or heavy cake abounded, and were accompanied by potatoes in their jackets and a heaping platter of salt codfish, creamed and steaming-hot. After church, if the "contract" had gone well, the family ate the favorite of all good Britons, rare roast of beef. And with the left-over beef the Cousin Jennie made that typically Cornish dish, the pasty.

The pasty is a sort of a portable beef stew folded into a purse of pie dough and baked to a rich, golden brown. Warmed on a shovel held over a candle, the Cousin Jack's pasty provided him with a nourishing, well balanced meal no matter how far underground he was working. Together with the vegetables which went into it, it made just the dinner a hard worker required. Today, restaurants throughout the Upper Peninsula include pasties on their menus. Old-timers scorn them as counterfeit—no one, they say, can make a pasty except a true Cousin Jennie. Likewise homemade scalded cream poured over a lush baked apple is something to bring tears to a gourmet's eye. But, in spite of its simple-sounding recipe, no one but the Cornishman's maid seems to be able to achieve it.

As more and more immigrants appeared on the copper range, the Cousin Jack advanced in caste. He became a shift boss, mining captain, or mine superintendent. His skill was too great to waste on mere labor, and thereafter other nationalities beat the hand drills and trammed the rock. It was a rare mine on Lake

Superior which didn't include a few Cousin Jack bosses in its history. Often its success was proportionate to the number of Cornish on its pay roll. The Copper Country owes many of its dividends to the men from the Duchy of Cornwall.

The Scandinavian races followed the Cornish to the copper range, and they, too, found this distant pine country a replica of "home." Village names like Greenland, Bergland, and Rockland are reminders of the Swedes, Danes, and Norwegians who were among the early settlers of northernmost Michigan. The Finns seem to have liked the Copper Country better than home, for they came to the range in such numbers that today they make up the majority of its population. According to John Kolehmainen, an authority on his race in this country, there were 18,000 of his countrymen on the range in 1900, and 31,000 foreign-born Finns lived there in 1930. Depending on your viewpoint, a community can or cannot have too many Finns.

A reasonably unbiased Copper Country critic has said there are only two kinds of Finns—the temperance Finn and his drinking compatriot. The former buys a little hay farm as soon as he is able and next season plants a plot of potatoes. Thereafter Paavo and Impi apparently exist entirely on potatoes and coffee, with fried fish for variety. Paavo worked in the mines during the months his hayfield lay fallow under the snow, and what cash he brought home he and Impi guarded thriftily. If the Copper Country Finn chose to emulate the ways of the bees and the ants too earnestly, certainly there was no more ideal citizen. Storekeepers were—and are—glad to give him credit, for his honesty is proverbial. The tax collector rarely had to call about delinquencies, yet the Finn wasn't a citizen who bickered about pavements, sidewalks, or garbage collection. Underground, his fellow workers could hardly claim he shirked, for he labored mightily and seldom argued if he was put upon. The companionable Cousin Jack and the gregarious Irishman, however, didn't favor his close-mouthed demeanor.

"All week he works like a damned ape, not saying a word. On Sunday all he wants to do is sweat in his bloody hot sauna," the Britons complained.

But, where the temperance Finn's ultra respectability was some-

times irksome, the drinking Finn's conduct brought him into disrepute from one end of the range to the other.

As Dr. Viljo K. Nikander, founder of the only Finnish college in the United States, at Hancock, once told newspaper reporters, "The drinking Finn is a bad fellow." Dr. Nikander was understating the case.

Someone has said the Finn is a "guy that worries hard." What he may have meant is that Paavo was given to introspection, neurosis, and self-sorrow, all of which simmered within even when he felt fine. A temperance Finn sweated out his moods in the community steam bath. But when Paavo took to drowning his troubles in drink there was hell to pay, literally. Newspapers along the range have recorded endless accounts of Paavo's hell-raising. The Ontonagon *Miner* once published an illuminating tale of a Finn who, dissatisfied with the pace of his horse, dismounted and harangued the beast. Getting no oral satisfaction, he commenced a one-sided knife fight which lasted until the horse fell bleeding from a dozen wounds. At Mass City, John Kangass had words with a bartender, Gus Pertunen, and Gus came out second best, stabbed with a knife 7½ inches long and 3½ inches wide. The same year, two belligerent Finns quarreled over a bottle while working underground. They settled the matter with sharp-pointed sconces, and the loser, it was reported, hadn't much chance of recovery. Stories of the violence of liquored Finns are numberless, and good Finns deplored their drinking countrymen with such sincerity that folks on the range came to think of them as two different races.

Copper Country Finns had a national hero, but unlike Dick Buller he was flesh and blood. He was the charcoal tycoon, Oskar Eliasen, who rose to such wealth and local importance that a Keweenaw town still bears his first name. Oskar came to the range in the sixties. Working in the Torch Lake smelters, he soon realized the growing district would be needing more and more charcoal, saved his money, and bought tracts of hardwood timber. As he prospered he hired fellow Finns to log them. Unfortunately, Eliasen built his small-scale charcoal empire on mortgages, so that his prosperity rose and fell with the price of copper. The great depression toppled Eliasen's paper-ridden charcoal business,

and he ended his days far from prosperously. To his fellow Finns, however, Oskar Eliasen was the symbol of the Horatio Alger credo of all the United States.

Other races have their own Copper Country success sagas and, in a measure, their own heroes. Louis Adamic has written of the Keweenaw Croats in his book *From Many Lands,* telling the poignant story of that pacific race as typified by the unswerving courage of one of its women. The Italians, now largely departed from the range, are proud of the fine voice of Attilio Baggiore, son of a C. & H. miner. The Metropolitan has heard Baggiore and better radio stations vie with one another to air his excellent tenor. A dozen other nationalities have reason to point with pride to successful sons and daughters who grew up on the range. A distinguished German lawyer, an eminent Norwegian physician, and a number of important business executives of other racial backgrounds have made names for themselves in the world and added luster to their Copper Country homeland.

The range no longer holds a Grand Callithump to celebrate the Fourth of July, but its memories of the great days when the Copper Country made Americans as well as copper are alive and lusty. Some of the best tale spinners in the United States are old gentlemen who sun themselves on front stoops in Calumet and Ontonagon, Houghton and Hancock. And they have excellent material. The range for all its stability was a mining community where anything could happen, and often did.

CHAPTER XIX

MAAZE MONDAY

IT WAS NOT ENTIRELY their love for rich, barber-shop harmonizing which so often moved Cousin Jacks to sing "Holy, Holy, Holy" as they were lowered down the shaft. Sometimes they were inspired by the thought that, the farther the man car descended, the nearer its occupants approached their blistering, Wesleyan hell. More than likely, the Cornishmen realized, as they sang, some or even all of them might not be returning when the shift was over.

Once your Copper Country miner went to work, he soon forgot the dangers of a job underground. He wasted little time in brooding over the perils which were his daily fare. Falling rock, temperamental giant powder, and choking fires were ever present hazards, as they are in the lives of all who earn their bread beneath the earth's surface; but danger was regarded as all in a day's work, and, if the dangers often became real and terrible disasters, these, too, were accepted as inevitable.

The lake miner could, at least, be thankful that the copper range didn't threaten his life with the deadly, inflammable damp of the coal fields, the blazing temperatures of the Comstock lode, or the high altitudes of the Chilean copper camps. But if he thought at all of his backhanded good fortune, he was only mildly comforted. The Copper Country had a special peril of its own, one which was almost unknown elsewhere in the mining world. This was the savage and destructive "air blast." Air blasts had all the horror of the unknown, for experts never quite agreed as to what caused them or what means might be taken to prevent them.

One Saturday afternoon in October, 1927, the range was shaken by the worst air blast of them all. It occurred deep in the Old Reliable, the Quincy Mine, which already had seen disaster

earlier in the year in the form of a week-long fire. The force of the blast could be felt in Hancock; its victims, working on the forty-first level, felt it more violently. There, the Cousin Jack timber boss George Williams was directing his six-man crew in their efforts to replace fire-eaten timbers and block up the yawning mouth of an old rock chute. The men were struggling with heavy "ten-by-tens" lowered from the fortieth level by another crew. Williams and his men had just put two sticks in place over the chute's mouth when they felt the solid rock floor beneath them tremble. No one paid it any great attention. Men working nearly a mile underground beneath a honeycomb of drifts, stopes, and levels were accustomed to nervous shiverings as the vast amount of rock above them settled itself.

They probably ignored the light breeze which soon washed across their faces. But when the breeze grew to a wind, they must have realized that something unusual was indeed in the air. The wind gathered its full force quickly. Soon it was no longer a wind but a gale—a tempest—then a hurricane! It came as though fired from cannons, carrying with it everything in its path. The blast traveled along the level above, shot down the old chute and drove the heavy timbers down upon the men. Two died instantly. Its force shook a deluge of rock off the ceiling, and Williams and three more were crushed beneath a hundred tons of vein stone.

Only Henry Hirsikorski escaped that first deluge, and he ran toward the shaft. But just before he reached it the force of the air knocked him down and another rock fall pinned him to the floor. It didn't kill him at once. In fact, helpless rescuers could hear his pitiful cries growing weaker and weaker for two long hours. There were more volunteer rescue parties than would possibly be needed, but all of them stood impotent around the shaft collar. The blasts continued intermittently until after dark, and even the bravest could understand that any attempt to "go below" would only add their own lives to the casualties. It was nearly midnight on the following Tuesday before the rock could be cleared and the last body brought to the surface. At the funerals during the next few days, among the mourners were six new widows and twenty-nine fatherless children.

As the *Mining Gazette* explained: "Air blasts are more or less

of a mystery as to origin but are believed to be due to earth tremors caused by slight slipping of the strata." Miners, less scientifically inclined, said they were caused by cave-ins, away back in the miles of abandoned workings. The falling rock compressed the air and shot it out into drifts and levels with cyclonic force. Whatever the cause, air blasts were peculiar to the deep mines of the Copper Country and due, partly, at least, to its mining methods. On occasion the blasts caused temblors of earthquake proportions, and in the case of the Atlantic Mine literally shook a mine into nonexistence. The Atlantic blast lasted for days and caved in the entire workings so that the once prosperous company ceased operations. A saving grace of the air blasts was that they usually occurred on Saturday afternoons and Sundays when only maintenance crews were underground, so that fatalities were few; but the miners could not be sure the blasts would never break loose on a workday.

A far more certain means of death was the ever threatening fall of rock. Judging from Houghton County mine inspectors reports, about half of the range's underground deaths were caused by the crushing rock. Keweenaw geology was at least partially responsible for these numerous fatalities. As has been said, the copper-bearing veins of the range dip sharply toward the bottom of the Big Lake. As the mines went deeper the "hanging wall," or rock above, hung over the miners like the ceiling above a stairway. Its tremendous weight was supported by heavy lags and stulls, or timbers; but settling and natural weight shifting still shook the rock down upon the miners. Old-timers say that falling rock took inhuman pleasure in crushing a miner with a large brood to feed or one of a pair who had worked together as friends and partners for years. A neighbor of the author is the sole survivor of a group of six young Italians who left their native village together. The boyhood friends saw their number die, one by one, as falling rock claimed them.

Those who side-stepped rock falls were always endangered by carelessness—either by their own or that of others. Innumerable miners have walked into open shafts to their death and whole man cars full of men have been tipped out or dropped to an abrupt end at the bottom of the shaft. Explosives, of course, were espe-

cially disastrous to the imprudent. In the old days of black powder, some charges (known as sleepers) inexplicably didn't explode with the rest. The sleepers sometimes went off just as the miners returned to work and at other times exploded when trammers' picks struck them. Between times, a keg or two of black powder blew up for no discoverable reason, but with most definite results.

Fire could claim its victims as well as rock and giant powder, although it was more of a menace to stockholders' dividends than to miners' lives. While the Copper Country miners were spared the constant threat of inflammable, underground gases, the forests of tinder-dry timbers could be set afire nearly as suddenly. The temperature of lake mines was about that of a summer day, and a constant breeze blew through the levels and drifts—dry and as arid as the winds of mid-August. Even the greenest timber was dried out in a short time; a tiny spark could easily set off a roaring furnace, fanned by the draft.

On a Saturday afternoon some years before the Quincy air blasts, two hundred miners were preparing to come to the surface from the twenty-seventh level of the Osceola Mine. But smoke was trickling out of Number Three, the man-car shaft, and grew to billowing clouds before the rescue crews could arrive. Number Three Shaft served as a chimney to the fire blazing beneath and the rescue squad closed it off at once, with timbers and heaped-over earth. Number Three was interconnected with other shafts underground, and it could only be hoped that the two hundred miners might make their way to emergency ladders and reach the surface and fresh air. A hundred and fifty climbed to safety up through Number Five and rescuers brought up and revived twenty more. The other thirty, however, were carried to the surface lifeless, smothered to death where they had fallen in the dense yellow smoke. Ten of the thirty were drill boys, youths in their teens serving their apprenticeship.

Sad as Osceola shareholders must have felt at this human tragedy, they must have considered, too, the fire's cost in dollars. At the time, the Osceola was clearing $30,000 net profit every thirty days. It was weeks before the fire was completely extinguished, the workings repaired, and mining could be resumed.

The Calumet & Hecla suffered five major fires over a period of years. There were a number of casualties, and the cost in dollars was immense. The last fire, incidentally, had about it such suspicious earmarks of arson that the company made a rule, still in force: "Positively No Visitors—Underground."

With death lurking overhead in the rocky ceiling, underfoot in an overlooked sleeper, and on all sides in the dry inflammable timbers, it was only natural that the lake miner should set out to raise hell earnestly on his day off. If life underground wasn't the cause of his hard-drinking, hard-fighting relaxation, at least it made an excellent excuse.

The mighty thirst of mining camps is, of course, traditional. But the Copper Country likes to think it cut the pattern for this, too.

Old-timers point with perverse pride to a local institution which was never seen at other mining camps with the possible exception of those in Alaska. This was an Arctic Patrol whose activities resembled those of the St. Bernard dogs who succor fallen travelers in the Swiss Alps. The band of mercy was made up of the Red Jacket constabulary augmented on pay days by a considerable number of volunteers. It was created by Red Jacket architecture. Because the snow lay three feet deep or more, for six to eight months during the year, saloon and store doorways were up a short flight of stairs, about a half-story above the street. It was the custom of barkeepers to escort rebellious, quarrelsome, or merely overloaded clients to the door and give them a shove. The gentlemen ended their short flight without harm and generally fell asleep in the deep bed of snow. The Arctic Patrol had to be constantly on the alert lest morning find Fifth Street strewn with stiff and very gelid miners. The patrol made its merciful rounds with the regularity and frequency of a big-city streetcar system, and on every trip collected enough customers to demonstrate to doubters that the thirst of the range was nearly unquenchable.

Drinking and drunkenness were so common that the Cousin Jack, at least for a time, continued to observe an old-country custom. After a hard Sunday at the tiddlywink, when the jitters shook his nerves and the little folk tramped inside his skull, he

took the day off to convalesce. It was simply hang-over day or, in Cornish crake, "Maaze Monday." *

The earnest temperance advocates who swarmed downstate Michigan regarded the Copper Country as the sink of sinks and frequently traveled north to see what could be done about this iniquitous outpost. They overlooked the fact that many Keweenaw saloons were considerably less than doorways to hell. To newly arrived miners, particularly, they were genuine clubs—probably nowhere else could these men converse in their own language. A Pole, for example, too newly arrived to know any English, dropped into a compatriot-owned saloon, read Polish newspapers, fidgeted while a more literate friend wrote his letters home. To the races used to wines and beer from childhood, the name "saloon" was a complete misnomer.

Contrary to most legends of boom-camp living, there was little abandon in the Copper Country's love life. Most miners were family men who rarely dallied, and unattached miners were usually more interested in liquor and fighting than in loose and lovely ladies. Don't think for a minute, however, that the copper range didn't have its biological moments.

The Red Jacket gallants could drop into the four establishments at near-by Lake View and while away their wages with the thirty nymphs there environed. Seven houses of joy flourished in Houghton, and as many in Hancock, while Ontonagon was rather proud of its good, old-fashioned Stockade within walking distance of the Courthouse. Journeymen *filles de joie* set up shop now and then, wherever and whenever isolated mines were prospering. Nostalgic Keweenawans can't forget the now-respectable Portage Lake madam whom it seems only fair to call Nellie Thomas. Nellie was a woman with pride in her profession. No matter how frequently a client called at her two elegant retreats, she never reduced the minimum fee of $5. Nellie understandably looked down upon her contemporary, Frankie McPherson, who not only asked the cut-rate fee of $2 but had a disgusting penchant for Pittsburgh stogies.

* "With some fourpenny for to drink, reason 'pon its throne will rock
Forgettin' Old Wheal Damsel [Damsel Mine]
Shall we work or shall we rest, 'pon Maaze Monday?"
(Fragment of an old Cornish song.)

Copper Country gaffers with a tear or two for the old days mourn the recent passing of another professional lady. Their tribute to her memory is, "She was the best businessman on the range," although an account of her activities bears a startling resemblance to the white-slave fiction of the gay nineties. She served as a combined outfitter, wholesaler, and general employment agent to the Upper Peninsula whore shoppes. A resort, for example, which found itself temporarily understaffed, applied to her for reinforcements. If a temporary wave of reform incited a raid with its consequent havoc to the furnishings, this versatile woman was able to supply a complete new outfit including beds, opulent nudes done in oil, and a red lamp for the window. And should one or two of the staff weary of their employer's clientele, a transfer to more congenial surroundings could be arranged. This efficient dealer in the pleasures of the flesh grew exceedingly prosperous, moved downstate, and became a respected member of the community.

The most famous and best remembered Copper Country madam was a handsome natural blonde whose name was nothing at all like Bess Foster. In another social setting she would have been called a beauty—possibly, even a lady. Her gentlemen acquaintances, however, admired her more for a quality which can be described only as guts. Bess one time quit morphine—cold! As the story runs, she broke a long-standing rule one night and accommodated an insistent customer. Soon laid low with acute gonorrhea, she began taking morphine to allay the pain and, before she realized it, was deep in the clutches of the habit. Recovered, at last, from her infirmity, she decided to quit the drug. With no tapering off and no medical assistance, Bess never again took anything stronger than aspirin. As morphine addicts have testified, her suffering was a terrible thing. Bess's customers admired her all the more for conducting business as usual, all through the awful ordeal.

Bess's swan song to the range also marked the conclusion of one of its most sardonic scandals (second only to the pistoling of a cuckolding coachman). In a sentimental and unguarded moment, Bess married the scion of a wealthy and important Lake Superior family, one which was just then trying to forget that

its founder had been a roystering, hard-drinking miner. The family, it should be said, was dead game and did what it could to help make a go of the marriage. Bess, for her part, quit her profession and attempted to be a housewife. The scion, however, was what is known in modern parlance as a "heel" and gradually disgusted even the hardened Bess. After a brief pretense of wedded bliss, the two left the range separately, and neither has been heard of since.

Next to liquor and far more than sin, the Keweenaw miner loved a good fight. The fist was the Supreme Court of the range and the final judgment on any and all disputes. A man's right to lead was determined by his fighting ability, and many a mine captain owed as much to his fists as to his "eye for ore." Occasionally, the Cousin Jacks at the old Central Mine decided who was to preach next Sunday by squaring off a space and matching the two applicants in pitched battle. A long remembered fight at Central was staged over the proper pronounciation of the word "lager," and of course, any criticism of a Cornishman's rendition of "Lead, Kindly Light" was considered as more than ample cause for fistics.

Carlos Rawlings, a former C. & H. engineer, tells of the time his grandfather was hired as a teacher for the log school at Central. The school board blandly suggested that his success as an educator would largely depend on how soon he beat up his larger pupils. Otherwise, the trustees pointed out, he wouldn't last any longer than his predecessor. Rawlings, fortunately, was a strapping six-footer, and although he had some difficulty with the eighth-grade students he managed to distribute black eyes and contusions where they did the most good. Parents, thereafter, smiled with favor upon the new dominie. "He's our kind of teacher," they told one another.

But the lake miner couldn't fight all his spare time away and turned to sports as the next best diversion. The Cornish introduced their old-country style of wrestling to the range, and no holiday was complete without a bout or two of Cousin Jack huskies tossing one another around a ring with the Cornish-invented "flying mare." The opponents wore stout, canvas jackets, buckled at the back, and the rules allowed none of the modern

holds of wrestling. Instead, it was a matter of main strength, each wrestler striving to grab hold of the other's jacket and toss him to the mat. Nor did the followers of Cornish wrestling hold with the grunts, groans, and grimaces of present-day "rassling." If the process was painful, no Cousin Jack worth his pasties would show it.

Hand-drill contests are still a favorite holiday sport on the range, although the air drill has left few miners who know much about hand drilling. Nowadays, not many can beat a drill "either hand afore"—that is, swing a sledge fast and true either from the right or from the left. But not so long ago, every location of any consequence sent its best drill team to Calumet every Fourth of July to compete for the championship. An account of a drill contest held at the turn of the century noted that the winning team drilled a 9¾-inch hole during the ten-minute contest. To an outsider, this would seem to be pretty fair progress through a tough diorite or porphyry boulder. The range, however, considered this as somewhat amateurish, and the first prize of a barrel of beer seems to have been awarded grudgingly.

Other sports were imported from the old country. Britons introduced curling, lawn bowls, and a cricket league flourished until a few years ago. The Copper Country youth, however, liked best the ice hockey of the French Canadians. Both Calumet and Houghton had immense indoor skating rinks, and the range came to witness semiprofessional matches long before the rest of the nation ever heard of a puck. The Calumet team was the terror of an early hockey league, composed of teams from Winnipeg, Minneapolis-St. Paul, Portage Lake, and the Sault. The team was so expert that the matches became little more than skating races with opponents chasing the sons of C. & H. miners around the ice. Present-day big-league hockey numbers many Keweenaw-born players among its finest.

Between drinks and other divertisements, the miners joined lodges. It was a misanthropic Keweenawan indeed who didn't belong to at least one fraternal, social, or national organization. And it was an insignificant order which didn't have at least one chapter somewhere along the range. Furthermore, when the Copper Country joiners didn't find the rituals of existing lodges

to their liking, they wrote new ones and started lodges of their own.

The Knights of Pythias' ritual, for example, was written by the schoolmaster of the one-room schoolhouse of Eagle Harbor. Individualistic Keweenawans formed the Philanthropic Society of Sherman, in which each chapter was designated by the phrase "Conquering Hero" followed by a number. "Conquering Hero Number Two" thrived at Central, and other Heroes bloomed at all other locations of importance.

The more powerful fraternal groups, however, were those of racial or national backgrounds. The Cousin Jacks belonged to the Sons of St. George, the Irish to the Ancient Order of Hibernians, and so on through numerous European groups with their unpronounceable titles. All had a passion for parading and were incessantly staging small-scale Callithumpians of their own. They marched whenever their patron saint or saints needed honoring, and often enough the parading ended in a free-for-all battle with scoffing onlookers who were followers of other saints.

But no matter how different their backgrounds, beliefs or purposes, the Copper Country's lodges had one thing in common:

Their treasurers' reports invariably ended with an almost identical notation: following "Cash on Hand" and "Dues Receivable" the treasurer listed, with a flourish, the mining shares held in the name of the lodge. Often the shares were those of the Calumet & Hecla Mining Company; but, whatever the issuing company, they expressed better than any words the mutual understanding between employer and employee which for so long made Michigan's copper range "The Ideal Mining Community."

CHAPTER XX

THIRTY-NINE LITTLE WHITE COFFINS

TROUBLE CAME TO THE RANGE in July, 1913, when Charles H. Moyer swung off a parlor car at Houghton and disappeared into a building on Shelden Street. The president of the powerful Western Federation of Miners was in the Copper Country on business.

Moyer's reputation had preceded him. All the range knew that he once had stood trial for blowing an ex-Governor of Idaho to bits, and that the sovereign State of Colorado still blamed him for dynamiting thirteen Cripple Creek miners to their irrevocable reward. The activities of the Western Federation, personified by Moyer, had provided the nation with lurid newspaper reading for nearly twenty years. Along with the rest of the country, Keweenawans read of the bloody strikes the Federation had staged in western mining camps. They had seen pictures of encamped militias readied to protect women and children from the turbulence that seemingly went hand in hand with the initials W. F. of M. The Copper Country understood what happened when labor and capital quarreled, but it knew of the attending violence only by hearsay.

In an era of the bloodiest labor disputes this country has yet known, Michigan's copper range watched from the side lines. Its detachment was more than geographical. The range was insulated by seventy years of nearly ideal employer-employee relations; to its people, the labor movement's growing pains seemed little more than newspaper-inspired fiction.

The mine operators and, of course, the miners knew that the Federation had sent organizers to the range back in 1909. In four years as many locals were organized, and several thousand miners were induced to carry union cards. The operators watched these goings-on complacently; in their eyes, W. F. of M. was merely one more Copper Country fraternal organization, though they

knew its activities elsewhere had been far from peaceable. The Federation, they said in effect, can't decry conditions here—so why let it worry us? A good many miners, too, looked on the Federation as just another benevolent society and accepted it as such and little more. Certainly it is a commentary on the Copper Country attitude that the Federation needed four years to sell it the union idea.

Organized labor had first to find a bone of contention on the range before it could point out the abuses of capital and justify active, dues-paying participation in the Federation. Good old reliables, like "starvation wages," "peonage," or "miserable housing" carried no weight on Lake Superior. No doubt parasitic Bostonians lived handsomely on Copper Country dividends, but experienced rebels like the Federation organizers knew it would take more than extravagant living on the part of absentee shareholders to foment dissension among the miners.

Moyer's appearance in Houghton was significant: the Federation had at last found the bone of contention.

The one-man air drill had just appeared on the range and was rapidly being adopted by the mine companies. For three decades the miners had used a ponderous drill which required the strength of at least two huskies to move it from one part of a stope to another and set it up again. The new drill, though it weighed about one hundred and fifty pounds, could be set up and operated by one man, though the operator needed a helper to move it. Even the newest, unthinking worker could understand when the Federation explained that the one-man drill would soon put every other miner out of work. The trammers, who labored underground shoveling broken rock and shoving heavy tramcars, were told that now their chance to become higher paid miners was gone forever. The trammer's job was undoubtedly a killing one; you seldom found an old man who could boast that he had spent his working life tramming. No wonder they so quickly understood the threat of the machine age.

Federation speakers were skilled at pointing out such simple facts and stirred the trammers with the same anger that later moved buggy-whip manufacturers confronted by the automobile.

In three weeks' time, the one-man air drill accomplished more for the Federation than four years of speech-making. On July 22, 1913, Moyer was able to send an arbitrary note to mine officials demanding that two men operate a one-man air drill. The Quincy superintendent returned his note "unopened and unread." The Calumet & Hecla opened its note, but if the officials read it they didn't say so.

On the morning of July 23rd, every mine on the shores of the Big Lake except two insignificant South Range shafts was closed down tight: 14,528 miners and 1,500 stamp-mill and smelter workers were idle. The men, many of them still uncertain as to just why they were not at work, spent their unaccustomed day off in talk. They gathered in the saloons and on the street corners trying to make sense of their situation. Only the trammers were sure of their "cause"; their fellow workers hadn't grasped the ways of unionism and the principles of the "sympathetic walkout."

Next morning several thousand workers showed up at the mines ready to go underground. They felt that an association of workers was a fine idea—as long as it didn't interfere with working. Every shaft collar on the range was immediately the scene of rioting and disorder. There were no fatalities, but cracked heads, contusions, and broken ribs were sufficient indication of what might occur. The mine operators were moved to instruct the governor of Michigan to call out the state militia. Governor Ferris cooperated heartily. He ordered out all available infantrymen and also sent two batteries of artillery and three brass bands.

While the state militia was marching northward, a less respectable army was leaving the East by train. The mine operators, as shortsighted as the miners, had entered into negotiations with two New York City organizations which, it is said, stood ready to cause or break a strike. The cream of Bowery flophouses and First Avenue gin mills were on their way to the Copper Country to serve as mine "guards." The Federation knew the breed well and called them "finks" and "scabs" although they were not imported to work underground or replace any striking employees.

Soon 1,200 of these guards* were patrolling mine company property, and the Federation was quick to see it now had a far more real grievance for the miners than technocracy and an air drill. W. F. of M. orators pointed out to wavering recruits that mine officials were as treacherous as men could be. Operators who boasted of the fine working conditions at *their mines* were bringing in thugs and gunmen to keep their employees from earning a decent living. And when the miners were told that 1,700 non-striking mine employees had been deputized and furnished with guns their anger turned to violence.

Within the next few months W. F. of M. organizers found plenty of fuel for the flames they were so busily fanning. Four guards chased a miner off mine property and tried to follow him into his boarding house. He and his fellow boarders barricaded the doors and the chagrined guards fired into the windows. When the smoke cleared Diazig Tizan was dead, and Steve Putrict so seriously wounded that he died shortly afterward. The guards had some difficulty excusing themselves on the ground of self-defense, for not a single firearm could be found inside the boarding house.

A little later, three newly arrived Canadians who had gone to work for the Copper Range Mines were riddled with rifle bullets while they slept. Striking miners were accused of the killing but insisted that no Federation man carried a rifle. Another time a guard and a miner shot it out on the streets of Hurontown, and both were carted off to the morgue. The whine of bullets was heard often during the next weeks, and while the strikers contributed their share to the gunplay the mine companies couldn't deny that they had armed their guards.

What had begun as an uninteresting quarrel over an air drill was now colored by violent death, and the nation's press sent its star reporters to the range with instructions to find out what was really going on in Michigan. Journalists from the New York *Times,* the Chicago *Tribune,* and the Cleveland *Plain Dealer* as

* It was pointed out that the "guards" had more reason for striking than the strikers. The mine operators paid the guards' employers $5 a day per man while the guards received but $3 per day—a niggardly sum for constant exposure to very probable injury and quite possible death.

well as the Detroit papers and the Associated Press toured the range. They returned to their hotels in Houghton and Hancock with little or nothing to write about. They had seen the pleasant houses, the fine schools, and the library of Calumet & Hecla. Elsewhere they had seen similar, though less extensive examples of paternalism. Tried and true phrases such as "melting pot amidst squalor," or "gaunt children in an industrial waste land" were too inaccurate, even for the yellower journals. Moreover, there was no longer a complete shutdown. As early as August 15th, the Calumet & Hecla, Quincy, and Copper Range mines were running again, though they shut down intermittently when violence broke out. The news value of the strike was, in fact, definitely minus.* The press concluded that organized labor was merely out to pick an unusually juicy plum, and stories of the Michigan Copper Strike were crowded off the front page by the doings of that swaggering, two-gun Mexican bandit, Pancho Villa.

The only bystanders who took an interest in the Michigan strike were those Copper Country citizens who were neither miners nor mine officials. The storekeepers, the professional men, the office workers who stood to gain nothing from the strike were terrified for their wives and children. They formed a Citizens Alliance with no militant intent other than to demand that the state bring order and peace to the range. The Alliance was something new in strikes, a third party in what was ordinarily a strictly two-sided issue. Under other circumstances, the Alliance might have accomplished little more than other such citizen groups. Fate, however, chose to make it a most important factor in the trouble on the range.

Just at the time the Alliance was formed, the strike seemed to be dying of inertia. The W. F. of M. was running short of funds, for its strong locals elsewhere were losing interest and contributed less and less money to what seemed now a stalemate. In the East, directors of the mine companies concluded that the miners had no valid reason for striking and instructed their superintend-

* The press, had it felt in a prophetic mood, might have given some space to one of the Western Federation speakers at a meeting held during this period. He was a bushy-browed young Welshman, just coming up in the Mining Department of the American Federation of Labor. His name wouldn't have meant much then, but it was John L. Lewis.

ents to bide their time and never mind the dividends. Even the state militia had gone home. The affair on Lake Superior was fast losing what little drama it had possessed.

No one took into account, however, that Christ was born on the 25th of December!

Honoring His birthday had always been a joyful occasion on the range, but in December, 1913, the outlook for a happy Christmas was bleak indeed. Strikers and their families had lived sparsely for months; food was scarce, and even coal to combat bitter Superior weather was nearly nonexistent. Their indomitable women, however, vowed that labor's children, at least, should have a measure of happiness at Christmas time. The Women's Auxiliary of the Western Federation planned a Christmas Eve party for the children, to be held at Red Jacket's Italian Hall. There would be few gifts, mostly mittens, scarves, and woolen stockings knitted by work-roughened fingers. But at least it would be a celebration.

Early on Christmas Eve little knots of men, women, and children left Tamarack, Osceola, Centennial, and other near-by mining locations for the festivities in Red Jacket. They climbed the stairway to the hall above the Fifth Street saloon with hope and peace in their hearts. What if the decorations were meager and Santa Claus' suit moth-eaten? At least they had a fine, bushy Christmas tree cut from the Keweenaw's own forests. For the tinsel and glitter which should go with holiday parties the celebrants could use their imagination. Unfortunately, those in the Italian Hall had far too much of it.

The children rushed through "Hark! The herald angels sing" and wound up breathless in their anxiety to be done with preliminaries and get on to the gift-giving and homemade cookies. An expectant hush fell on the crowd as Kriss Kringle appeared and stooped to pick the first package from the pile of presents. In the silence, the strike was forgotten.

Then, either from in back or in the midst of the happy gathering, someone shouted, *"Fire!"*

Mothers and fathers grabbed their children, stumbled over the folding chairs and moved as one towards the stair well. The first fell headlong, pushed by the crush of those behind. At the

bottom of the steps, a solid mass of bodies piled higher and higher. The mass squirmed and kicked, but, one by one, the pleading hands grew feebler and, finally, still. No one was crushed, no one was trampled and no one was burned. There wasn't any fire! The strikers' children had simply drowned one another in a stair well, deep with their own bodies.

The rest of the world, rising on Christmas morning to exchange gifts and good wishes, read a shocking story in their newspapers. Seventy-four had perished in the Red Jacket tragedy. All were saddened for the eighteen adults who lost their lives on Christmas Eve, but it was horrible to think that fifty-six of the dead were little children. Nineteen small boys and thirty-seven little girls had died before Kriss Kringle got to them.

Sorrow for the dead was inexpressible. Sorrow for the living was universal. Half the world telegraphed its condolences, and in the Copper Country the tragedy erased all differences. There the sorrow was everyone's. But only for a few, short hours.

The Citizens Alliance, knowing all too well the poverty-stricken state of the strikers, tempered their sympathy with practicality and set about collecting a purse for the bereaved families. On Christmas Day, they raised $25,000 in cash. Mine companies were among the first to contribute, with Calumet & Hecla heading the list with an immediate donation of $5,000.

"Take this money, do whatever you please with it, spend it however you choose," the Alliance told the Federation. "We want to help in any way we can."

The Federation made a strange reply. "Labor will bury its own dead," said Charles Moyer. "We don't want any help from the Citizens Alliance."

Such bitterness was, perhaps, understandable, but Moyer was more than bitter. He went on to accuse the Alliance of sending a man to cry *"Fire!"* and stated in veiled but unmistakable terms that the fund of $25,000 was merely conscience money. In a tight little land like the Keweenaw, raw-nerved with six months of strike, the accusation spread like wildfire. Moreover there were enough eyewitnesses to the panic to give some credence to the accusation, even though their testimony was clearly influenced by the stress of the moment. Several were sure they had

seen a man at the top of the stairway and heard him shout "Fire." With encouragement they recalled that he wore a button and they seemed to think it was an Alliance button. The validity of this testimony should have been questioned immediately, for those witnesses who were doubtful as to whether they had actually seen the man were absolutely positive that he smelled of liquor. The coroner's jury later returned an open verdict, but said definitely that the Alliance could in no way be blamed for the disaster.

Irrevocable harm, however, had been done the moment Moyer opened his mouth on Christmas afternoon. The Copper Country's universal sorrow changed to open hatred. The striking miners said they would fight forever against the Citizens Alliance who killed children. The Alliance, angry when Moyer spurned their help, was infuriated when the miners themselves accused their neighbors of wanton murder.

Half a hundred strong-willed Alliance members met together and decided Moyer and his malevolent influence must be removed from the range at once. On the evening of the 26th, scarcely forty-eight hours after the tragedy, the door to Moyer's hotel room swung open and five grim, unsmiling men entered.

"Moyer, you son of a bitch, write out a retraction now—or else!"

"I can't—I have unassailable information on which I based my statement," newspapers later quoted the Federation president as having replied.

"Then I was slugged on the head, and a shot was fired into my back," Moyer said. "I was dragged to the street and half walked and half pushed for more than a mile and a half to the depot where I was flung on the train for Chicago. James MacNaughton, General Manager of Calumet & Hecla, was at the depot and told me I would be publicly hanged if I ever appeared in Calumet again." *

The deporting of Moyer was undoubtedly the worst possible

* According to Keweenawans present on the occasion, most of the mob which gathered wanted to toss Moyer into Portage Lake as he was being dragged across the bridge between Hancock and Houghton. A Copper Country cleric, whose faith and position should have tempered his private views, was quoted as remarking, "It was unfortunate that Mr. Moyer's escorts were so restrained."

thing which could have happened so soon after the panic of Christmas Eve. It made a martyr of the Federation president and deeply stirred the nation, already greatly moved by the tragedy at Red Jacket.

Worse yet, an evil sense of timing inspired a radical Finnish newspaper the *Tyomies* (which may be translated roughly as the *Wage Slaves*) to publish an affidavit signed by a purported eyewitness. According to the Chicago *Tribune's* translation of the *Tyomies* story, the witness said he saw the man who cried "Fire!" drop some object at the top of the stairs which tripped up the panic-stricken children. He also claimed to have seen two would-be rescuers driven off by deputy sheriffs who stood laughing as they watched the pile of bodies growing larger and larger. One deputy, so the eyewitness said, caught up a five-year-old child and twisted the little girl's neck until she was dead.

The editors of the *Tyomies* were later indicted for inciting riot, but their story was headlined in both popular and labor press throughout the country. Readers living thousands of miles from the Keweenaw soon believed that Michigan mine operators and the Citizens Alliance were even worse than the Federation said they were. Moyer held court for the press at St. Luke's Hospital in Chicago, and the bloodied martyr did all he could to encourage the public in its new viewpoint. It needed only the drama of the mass funeral in Red Jacket to blacken capital completely.

The saddest Sunday in the Copper Country's history was that last Sunday of December when a two-mile funeral cortège moved slowly through the streets of Red Jacket and on to the lonesome cemetery. The bells of all the churches in the township had tolled in sorrow through the morning, and their death knells seemed to surround the living. Superior drove lead-colored clouds over the range, and snow fell into the open graves. Thirty-two thousand people stood hatless while Cornish choirs intoned the most mournful of Wesleyan hymns.

Most moving sight of all was the single file of thirty-nine miners, each carrying a small, white coffin on his shoulder. These were the children's caskets, soon to be lowered into three common graves. The bodies of twenty-five of the Catholic faith were placed in one while the other two trenches received the remains

of the Protestants. Four separate funeral services were held over the graves—one in English, one in Finnish, one in Austrian, and one in Croatian.

The funeral and its effect on the nation were typified by commentators. A speaker at the cemetery likened Moyer to Peter the Hermit, leading a modern crusade. "Even if they killed our leader, our cause would go marching on." The lieutenant governor of Illinois was moved to call Michigan "the Russia of the United States, the last resting place of the army of special privilege." To all of which John Knox, general superintendent of the Calumet & Hecla, replied, "Before we deal with the Western Federation of Miners, water will flow from our shafts!"

The four days which so shook the little world of the Copper Country also had a mighty impact on public opinion elsewhere. Labor's cause was championed in the Michigan Legislature, fought for and upheld in the Congress of the United States. Even the White House was embroiled; but President Wilson sidestepped the issue, pointing out that the trouble in Michigan was not a Federal affair. Nevertheless, the strife on the copper range had become the nation's concern, and Congress authorized a special committee to study the matter. But during its thirty-day investigation the committee uncovered little that journalists could not have told them, months before.

Representative Taylor of Colorado, chairman of the committee, said, "The Michigan Copper Country is a little kingdom and James MacNaughton of the Calumet and Hecla is the king . . . the miners as a whole are not oppressively treated . . . there is little we can do to end the strike. The operators will not employ a single union man. The remaining strikers can go back to work if they surrender their union cards, otherwise they will be compelled to move to some other part of the country to earn a livelihood."

This report was made in mid-March, 1914, eight months after Moyer called the strike. In the days, weeks, and months between, the strikers had grown hungrier, and their principles provided no food for empty stomachs. As the last Congressman left the range, the mines were running close to normal, and on April 14th the last die-hard Federation men went to the polls and

voted the strike be ended. It was an empty gesture; the hollow satisfaction of the last word in a quarrel.

It remained for Peter Clark Macfarlane of *Collier's Weekly* to sum up the real meaning of the Copper Country's only major strike. In his article, "The Issues at Calumet," he wrote, in part:

> Blood has been shed, life taken, trade hindered, law broken, reason tied and one of our finest communities turned into a rumbling volcano—all by the preliminary quiver of the hand upon the clock.
>
> The main issue at Calumet is merely the issue between yesterday and today.

Despite its isolation and its self-sufficiency, the range had outgrown paternalism. The day of the all-powerful corporation, clucking over its workers as though they were children, was passing here as it had already passed in other industrial centers. The miners on the copper range had been lucky. They had lived under *benevolent* paternalism. There comes a time, however, when even benevolence is resented. Capital realized this, and as production returned to normal the mine companies showed they were ready to meet their employees halfway. Mine workers of all classifications were given an eight-hour day; the trammers' job was lightened; a wage increase, too complicated to explain here, was worked out to everyone's satisfaction. Labor, for its part, admitted the one-man air drill was inevitable and went back to work the better for its taste of unionism.

CHAPTER XXI

DYING INWARD FROM THE EDGE

PEACE HAD REIGNED in the Copper Country scarcely three months when a great conflagration—which was not labor trouble—broke out across the Atlantic. Franz Ferdinand, heir to the Austrian throne, was assassinated on a fateful day in June, 1914, and by August all of Europe was embroiled in the First World War.

Millions of pounds of copper would be strewn on the battlefields, for copper, from its earliest days, has been an essential element in the weapons of war. Brass rifle and machine-gun cartridges, shell fuses, copper wire, working parts of mighty guns, all called for endless copper. Whatever bitterness lingered on the copper range was forgotten in the wave of wartime prosperity which reached the Copper Country as early as 1915.

Every mine from Ontonagon to the tip of the Keweenaw Peninsula was operating full three shifts. Men saw their wages soar without any help from the Western Federation of Miners. Their womenfolk murmured in Finnish, Croatian, and broken English, "I told him so." And where 1915 was prosperous 1916 was prodigious.

More rock was stoped, mined, and hoisted that year than ever before; and more copper milled, smelted, and refined. Nearly 270,000,000 pounds of copper came from this tiny corner of Michigan during the twelve months of 1916.

The guide rails of the mile-deep Red Jacket shaft, still the wonder of the Calumet & Hecla, all but melted as skips brimfull of rich, red conglomerate sped up, then down, and up again. The mighty C. & H. produced nearly a third of Michigan's shining mountain of red metal, working not only the conglomerate but the Kearsarge and Osceola amygdaloid lodes. That old reliable, the Quincy, contributed about a tenth, and the "independents"—such as the Mohawk, Wolverine, Tri-Mountain, and Baltic

—added several million pounds each. Even the once fabulous Minesota, now called the Michigan, gave up 80,000 pounds of mass copper to help lick the Kaiser.

Not even the gloomiest geologist would have had the temerity to suggest, in the midst of such a boom, that 1916's mountain of copper above ground meant just that much less below. And no one remembered that ancient axiom of mining men, "Every skip load of rock you take today leaves less for tomorrow."

The price of copper went to thirty-seven cents a pound in 1916 and hung near this price through the next year. Not since the seventies had the copper market reached so high a level. And not since 1899 had Calumet & Hecla paid such dividends as in 1917, when the stockholders split a melon of $8,500,000. Even comparatively small mines paid out millions in dividends. The Champion paid $6,000,000 to its stockholders; the Ahmeek, $3,000,000, and the Osceola and the Quincy, nearly $2,000,000 each. Unsuccessful mines came so close to paying a profit that they continued operating a few more hopeful years.

In 1917 there was a new rush to the Keweenaw. This time the prospectors were traveling salesmen who jokingly called themselves the "bonanza boys." Every train that puffed into the lakeside station at Houghton or traveled on to the end of the line at Red Jacket brought its quota. The boys were laden with trunk after trunk crammed with the silk shirts and feminine finery local stores were far too conservative to carry. And how they sold!

Beds were crowded out of Houghton's Douglass House to make room for temporary displays. Across the bridge at Hancock, vacant stores blossomed overnight as the drummers offered miners' ladies their first glimpse of sleazy silk dresses, made up and ready to wear. Red Jacket and Laurium, however, were the real El Dorado—here were upwards of 5,000 miners, their pockets full of pay. So many of the "bonanza boys" headed for their share of the C. & H. pay roll that they soon overflowed the Hotel Michigan and set up shop in sample rooms behind, above, and alongside the some seventy-two saloons of Red Jacket.

These perambulating merchants stayed for several weeks at a time and were always ready to do business, day, night, and Sun-

day. Miners, their wives and children, who had so recently starved through the strike, bought novelties and gimcracks avidly, and still had money for their savings accounts at the Merchants & Miners Bank. The entrance of the United States into the war made little difference to the Copper Country folk as far as their finances were concerned. They withdrew their savings to buy Liberty Bonds generously, but the traveling storekeepers still thrived on the inflated pay rolls.

Then came the Armistice. The copper market went "down, down, down" as Dick Buller sang in his favorite hymn. It fell from an opulent twenty-seven cents in 1917 to an average low of twelve and one-half cents in the sorry year of 1921.

This was a time of nation-wide depression which would be remembered as comparative prosperity a decade later. The copper market as usual proved ultra sensitive to general conditions, and the Michigan mines curtailed operations even before other war-boomed industries felt the recoil. The Calumet & Hecla saw fit to close down entirely during 1921–22. Others quickly followed suit, and the miners were left with only their savings accounts and silk shirts to comfort them.

But there was no sackcloth and ashes in the miners' cottages; no wailing in the mine offices. Operators and miners alike had seen depressions come and go—had lived through shutdowns before. They would simply wait for the copper market to rise again and mine the Copper Country back to prosperity.

The mining officials were even jubilant over the situation. In a day before excess profits taxes the companies had piled up huge surpluses. Now, while the mines were idle, they could use this money to improve operating efficiencies. They could install new machinery and streamline their plants, so that everything would be in readiness for the next boom.*

* In keeping with the tenor of the era, the Calmet & Hecla Mining Company, in 1923, reached out its numerous tentacles and drew the Allouez, Ahmeek, Centennial and Osceola mining companies to its corporate bosom. In the course of the merger the capital stock was increased from 100,000 to 800,000 shares, the stockholders received generous bonuses and the title of the company was changed to the Calumet & Hecla Consolidated Copper Company. After this C. & H. was truly the colossus of the Michigan range, operating fourteen enterprises—five public utilities and nine copper mines.

About this time Calumet & Hecla began building its huge regrinding and leeching plant to replace older and less efficient methods. This new plant would enable the company to reclaim copper which for years had been thrown out with the stamp sand to form an ever widening desert on the shores of Torch Lake. It was announced that more than five hundred million pounds of copper could be reclaimed from this man-made waste land. This move was prophetic. The day would come, when, with not a C. & H. shaft operating or a single miner underground, the company's sole output would be won from the discarded stamp sand.

The Quincy Mine, however, showed the greatest faith in the immortality of the copper range. Its officials scorned a depressed copper market with the grandest gesture of all. Shortly after the Quincy's seventieth birthday, its board of directors celebrated nearly three-quarters of a century of continuous operation with the announcement that the largest hoisting engine ever built for any mine would be installed at the mouth of Number Two Shaft. Only a mining engineer could fully appreciate this huge piece of machinery, which stood sixty feet high and weighed close to a thousand tons. Mining men from all over the world climbed Quincy Hill to see it. They spoke in awed tones of its incredible hoisting powers—a skip loaded with ten tons of rock could be brought up from as deep as two and a half miles underground at a speed of forty miles per hour!

It appeared that the Quincy's faith was justified. In 1922 the copper market turned toward "normalcy" with Warren G. Harding and a Vice President named Coolidge. The motor makers were getting into mass production. Though their peacetime demands would never equal those of war, they needed as much copper as the utility and traction magnates of an earlier era. The Quincy's great hoist whirred night and day; the Calumet & Hecla's unending line of shafts reopened. The miners went back to work just as they had expected.

Soon the Quincy established another record. Shortly after its huge hoisting engine began operating, the miners reached the incredible depth of nine thousand feet on the incline or sixty-four hundred feet straight down towards the center of the earth. Here was another wonder of the mining world—only in the diamond

mines of the Kimberley had men ever dug deeper! Copper Country people delighted in boasting of the Quincy's great depth and sent an endless stream of picture postcards to the barest of acquaintances elsewhere. All portrayed in full color the immense red-brick building which sheltered the amazing hoist.

Sixty-four hundred feet straight down into the earth—more than a mile and a fifth! Fine figures for the chamber of commerce, but to a mining engineer they were the handwriting on the wall.

Not only at the Quincy but in all the mines of the district, the miners were going deeper and deeper to fill the skips. And the deeper they dug, the poorer the rock. The lodes grew wider, but there was less copper in the rock they yielded. Operating sheets showed that every pound of copper was costing more to mine.

Obviously, the copper range was aging. Mining districts are much like people—every ton of rock, like every hour in a man's life, brings closer the inevitable end. But the Copper Country might have spent a dignified and comfortable dotage, awaiting death gracefully, if a world-shaking crash had not closed the 1920's.

In 1929, the mines were running full blast along the range; Calumet & Hecla stock was soaring, proportionately, as high as Anaconda, Utah Copper, and the other speculative favorites on the New York Stock Exchange. Installment buying was putting radios, vacuum cleaners, and a hundred other electrical appliances into the homes of the many. High-pressure salesmanship had inadvertently created a market for copper that would, so the mining operators believed, last forever.

Three years later a good part of the U.S.A. was worrying less about paying the installments on their new electric toasters than earning the wherewithal to buy bread to toast in them. And three years later not a mine on Michigan's copper range was operating.

The Copper Country tumbled head over heels into depression almost as though it had been awaiting the push. Where the rest of the United States slid gradually towards the black days of 1932, the lake mines shut down within a few months of the de-

THE TOURIST'S COPPER COUNTRY

(*Upper left*) Author's wife examines 200-pound copper mass turned up this spring by WPA gang along main highway.

(*Upper right*) First shaft on Lake Superior: John Hays' melaconite Mine, 1844—now anonymous, though tourists marvel at the century-old excavation adjacent to Fort Wilkins.

Photo by Author

COPPER SUNSET

Today lake freighters hurry past the old-time copper ports eager for cargoes of Mesabi iron. The ore carrier caught here at the horizon in the molten splendor of a Copper Country sunset is a reminder of greater days.

bacle of October, 1929. Again copper went down, down, down, and this time it reached the all-time low of five cents a pound. Not even the most confirmed optimist could look on this depression as a rest period between booms. At least not for Michigan copper.

The depths to which the Copper Country sank were advertised for all to see when a Hancock grocer posted a sign in his window along with dried onions, apples and breakfast foods:

"FREE—GET A SHARE OF CALUMET & HECLA CONSOLIDATED WITH EVERY $10.00 PURCHASE—FREE."

Big Jim MacNaughton, it is said, was mad enough to bite a piece of steel hoisting rope in pieces, and the sign quickly disappeared. But the fact remained that the proud C. & H. which had once seen its shares touch a thousand dollars, now saw them classed with cheap, painted china premiums.

The status of the Copper Country people, too, went from bad to worse. In fact, it fell so low that *Fortune,* in an article entitled "The Dispossessed" published in 1940, saw fit to call the copper range a "rural slum." *Fortune* classed the range with such long hopeless areas as the one-crop cotton belt of *Tobacco Road* infamy and that sorry region of exhausted coal mines and eroded soil in the southern Appalachians.

Let the publishing tycoon Henry Luce and his staff of statistic sticklers mend their ways, look farther west than Broadway for their facts.

There is much about life and living on the copper range which will never be evident from the windows of a New York skyscraper. The Copper Country is no slum, despite ten years of vicissitudes that would have demoralized a less hearty people.

Naturally the population of Houghton County—which means the C. & H., the Quincy, the Copper Range Mines, in fact the present-day Copper Country—dropped with depression and unemployment. But it was a far cry from the overnight abandonments common to western mining camps. According to U.S. Census figures, the county's population fell from 71,893 in 1920 to 58,851 in 1930. But during the next ten bitter years, idle as

only an idle mining district can be, only 11,220 people left Houghton County. The remaining 47,631 that the census takers enumerated in 1940 make up a strange anomaly in social annals, but they are not exactly *Fortune's* "stranded people" living in a "rural slum."

These unemployed have roofs—and sound ones—over their heads; trees in their front yards and vegetable gardens out back. Often they have a community cow. Moreover, most of them own their roofs and their gardens.

When the Mohawk Mine wound up its affairs in the early 1930's and closed down for good, it sold company houses for a dollar a room, including the land on which they stood. So did many another mine. The Calumet & Hecla simply marked the monthly rent accounts of former employees, "Paid," and continued to do so.

The mass ejections which left thousands of families homeless throughout the United States were unknown in the Copper Country. You never saw pitiful piles of household goods stacked in the streets of mining villages. You never saw hopeless families standing beside them, the husband abject, his last shred of pride gone.

True enough, rent-free homes put no clothes on the children, coal in the stove, nor flour in the bin. Payless month after payless month soon ate away savings accumulated so gradually through the years. There came a day when three-quarters of the population of Keweenaw County were on relief rolls, and at one time or another two out of every three people in Houghton County were forced to accept public help. During the 1920's, Houghton County's annual expenditure for charity amounted to only $110,000. But in December, 1933, the county spent $400,000 for relief in that one month alone.

By that time most of the Copper Country was standing in line at the relief agencies. But they stood there with a far higher morale than millions of other relief clients in other parts of the country. They had their homes and, perhaps even more important, were accustomed to turning to higher authority in emergencies.

The mining companies had always taken care of widows and orphans; a company doctor looked after family illnesses; the mine treasurer often enough officiated as a financial midwife

when birth rate too far exceeded income. And worthy families were always taken care of during lay-offs and shutdowns. Paternalism had prepared the Copper Country for relief—the W.P.A. simply replaced the company.

Mining families had never looked on the company's helping hand as charity. Rather, it was a favor to be repaid with both work and loyalty. All along the copper range, relief agencies found frequent examples of this attitude.

There is the story of a grocer in Lake Linden who had given liberal credit to his Finnish customers during the early part of the payless 1930's. Once the Finns realized the depression was no temporary shutdown, they came to the grocer in despair. The relief office was feeding them but provided no money with which to pay up back debts. This weighed heavier on the good Finns than their meager diet. So they eagerly took up the grocer's suggestion.

He offered to credit their accounts with $2 for every cord of stovewood they cut, thinking he might get his own winter supply in this way. Instead he found he had gone into the wood business. His delinquent customers piled up cord after cord in their anxiety to repay the grocer's generosity.

There is the even more pointed story of the Cornish couple, who, long accustomed to company paternalism, asked for only enough help to help themselves. They were old and almost destitute and could have asked for and received a monthly relief check. Yet all they asked of the relief agency was a new stove.

Officials were puzzled. They had had many strange requests but never one for a stove. The old Cousin Jack explained that he and his wife were eking out a living by making pasties and selling them. Such an unprecedented amount of baking had burnt out their ancient oven. Would the welfare people give him a hand so that he could continue to support himself and wife? They would and did, and the indomitable old couple asked no more.

Such examples of personal integrity abound in the relief annals of the Copper Country. There is another phase of this spirit which defies explanation. It is local patriotism of a special kind, exemplified by the Battle of the Laurium Airport.

In the early days of nation-wide relief, an inflammatory group called the Workers Alliance of America, said to have had roots in Moscow, instigated strikes among reliefers in many an industrial area. Their avowed purpose was to raise the size of relief checks; their preachment was: "The Government owes you a better living." Organizers for the Alliance turned up in the Copper Country in 1934.

Here as elsewhere, the people listened to any and all proposed solutions to their plight. Alliance leaders took this willingness to listen as implicit acceptance of their principles. They were so confident that they swaggered into the office of Herman Rahn, relief administrator of Houghton County, and pointed ominously to the first name on their blacklist.

"Come the revolution," they warned Rahn, "you will be the first to hang from the lamp posts on Quincy Street."

Such calls were merely preparatory work. The showdown came in 1935, when the Alliance attempted to stage a strike of the relief workers engaged in the largest work project on the range, the construction of the airport at Laurium.

On a bright summer morning, Alliance organizers appeared at the project and at a prearranged signal a few of their disciples among the workers dropped their tools. The leaders then harangued the rest urging them to leave their work and arise!

One would think that in a district where almost every able-bodied man was on work relief, Alliance principles might have fallen upon fertile ground and sprouted. But the men of the Keweenaw were not ready to hand over their beloved Copper Country to radicals. They would accept relief if they had to, but not even the suggestion of *bolshevism.*

In the midst of the agitators' harangue, a stocky little Italian remembered only as "Tony" climbed out of his trench and was onto the speech-maker in an instant. It was an uneven battle. Tony had spent the last ten years feeding copper rock to the stamp mills at Lake Linden while the Alliance leader had been exercising only his jaw muscles. The strike died aborning with its leader fallen and bloody. The sight of their leader recumbent had about the same effect on his few adherents as the sight of a popular prize fighter lying defeated upon the canvas. They simply

switched over to the winner, and the Alliance disappeared for good.

So things went until 1936. This was the year that Michigan relief officials faced the real truth of relief. They admitted in print, then, that relief in the Copper Country was no passing emergency—it was a permanent problem.

They took cognizance of the fact that this year the Ahmeek mine reopened, and that plans were afoot to reopen a few shafts of the Quincy, Copper Range, and C. & H. mines. Even so, they said, "the mines no longer promise a livelihood to more than a fraction of the workers formerly used."

Time has thus far proved them right. The few mines that have reopened operate with the strictest economy of men and money. In the beginning the operators could only hope that the price of copper would go up and repay the cost of keeping the shafts open and dry. They hoped, eventually, to make a small profit—underneath lingered the faint hope of another boom.

The reopening of the Quincy, for example, bore more resemblance to a quilting bee than to the resurrection of a once great mine. The superintendent borrowed a little coal from C. & H., a little equipment here and there and managed to get enough credit to buy a new hoisting cable. Then operations began on a scale which led Copper Country wags to call the Quincy the "underground W.P.A." Only a comparative handful of miners were hired, and they piled out of the man car wondering if they would be going down to work again the next day. There were no busy crews of maintenance men, no geologists or engineers, exploring the drifts and laying out work for years to come.

In 1939, with nearly a dozen shafts working on the range, Michigan welfare officials amplified their 1936 statement with a still more realistic report:

> Even a sudden and extraordinary demand for copper at a price considerably better than the existing market would not make it profitable for many Michigan copper mines to resume operation.

The report goes on to say that even if the price of copper warrants the reopening of more mines the "effect on the labor market would be negligible." Mechanical and chemical methods would

replace a great many men, if the Keweenaw mines hoped to compete with western copper.

Neither time nor depression nor a clouded future, however, has done much to lower the population of the range. Young people who grew up during the "ghost years" leave when they can for jobs "outside." But relief officials tell themselves, even though their words may not appear in annual bulletins, that the majority of the people are there to stay. Cornish, Finnish, and Croats, alike, have deep roots in the Keweenaw and cling on as desperately as hardy pines to a storm-swept mountain side. In another decade, pessimistic welfare workers see themselves in charge of a relief project one hundred and fifty miles long. The unquenchable spirit of the Copper Country, however, rejects any such dismal thoughts: as has always been true, something will surely turn up. Some Keweenawans expect great things from the tourist industry and point convincingly to a growing crop of vacationers and an increasing harvest of tourists' dollars. They look at the calendar and wish that July and August were longer months, but nevertheless feel certain that if travelers discover the top of Highway Forty-one there'll be no sorry anticlimax to a brave and hearty century of copper.

. . . Like a hollow ledge
Holding a little pool
Left there by the tide.
A little tepid pool
Dying inward from the edge.*

*From "Second April," published by Harper & Brothers, copyright 1921 by Edna St. Vincent Millay.

EPILOGUE

THE MICHIGAN COPPER RANGE IN WORLD WAR II

SHORTLY AFTER the manuscript for this book was completed our nation declared war upon the so-called Axis Powers. Once again the United States is faced with the task of arming and equipping —almost overnight—a vast army and navy. In addition we have undertaken to help arm England and twenty-five nominal Allies.

We are told that World War II, more than any war in history, is one of resources and production. Authorities have assured us that Germany and Japan are likely to show first signs of weakening when their supplies of raw material begin to thin out. And, conversely, America's great hope lies in her enormous natural resources. Fortunately we have vast reserves of iron ore and crude oil. Likewise we have vast deposits of copper within our borders, waiting to be mined. It is only natural to suppose that total war would revive—temporarily at least—the dying Michigan copper range.

Friends invariably ask the author: "Isn't your beloved Copper Country booming again, now that we need all the copper we can get?"

So far the answer has had to be: "No, the Michigan range isn't much better off than it was before Pearl Harbor. As things look today, the war will have little effect on lake copper."

There are many reasons for this seeming paradox. It may be that some will be nullified before peace comes again. Certainly it would be folly to attempt to make any conclusive statements at this time. The only certainty, in so far as Michigan copper is concerned, is that the Second World War is definitely not being conducted by the rules of World War I.

First of all, an inflation-conscious Washington has fixed a ceil-

ing of twelve cents a pound on copper produced within the United States. In the days of 1914–18, the price of copper was permitted to find its own levels and consequently was bid up to the peak of thirty-seven cents. It was a sorry copper property indeed which couldn't make large profits at such a price and a lazy miner who couldn't buy all the silk shirts he wanted on the wages paid by the short-handed mines. But the present war promises neither fabulous profits nor silk shirts to any American copper camp. In fact, twelve cents is barely a "break-even" price on the Michigan range.

Washington has tried to stimulate copper production in old, low-grade mining districts such as the Copper Country by offering a concession of several cents a pound above the pegged price of twelve cents. One Lake Superior mine, for example, receives a bonus of five cents a pound, or seventeen cents for the copper it produces. Other Keweenaw mines receive slightly smaller bonuses. One would think that such concessions might return prosperity—if not the boom days—to the Copper Country. Unfortunately for Michigan copper, another department of our government has managed to forestall the benefits of a five-cent concession.

Under the Wagner Act, the Congress of Industrial Organizations negotiated with the Michigan mining companies during 1940–41, arriving at an agreement which provides for a wage increase with each penny increase in the price of copper. The result is that two cents of the five-cent concession is immediately paid out in increased wages. Moreover, because low wages and old age have depleted the available supply of miners, the Michigan mines have had to work longer than the fixed, forty-hour week to comply with the production requirements of the concession. Overtime is paid at the rate of time and one-half, which in turn uses up the remaining three cents of the concession. It is said, in fact, that after bookkeeping and statistical work is completed, at least one Michigan mine actually loses money on the concession arrangement.

Labor argues, with reason, that the situation is a good one. The miners now make a living wage and so contribute to the general prosperity of the Keweenaw. But labor also agrees that wages are still not high enough to attract more miners to the

district, thus limiting Michigan's copper production. As for the mine owners, they are just about where they were in 1939 and 1940. Obviously, they have little or no incentive to invest capital in new machinery or development work.

Incredible as it may seem, purchases of Michigan copper have actually fallen off since the declaration of war. As this is written, one Copper Country smelter has over 500,000 pounds of refined copper on hand. This, of course, is puzzling, but there are logical answers. One is the stagnated demand for copper created as our factories shift from peacetime to wartime production. Another might be that Washington is looking to the great western copper mines for large, immediate supplies of red metal. Perhaps a reserve supply of copper is purposely allowed to pile up on Lake Superior which will be moved East in one, all-out shipment. Outspoken critics say that our State Department is overanxious to keep South America a good neighbor and insists on purchasing Peruvian and Chilean copper even though we must pay ourselves a four-cent tax on every pound imported. Others say that Washington, in the confusion of wartime, has simply forgotten the far-off Keweenaw Peninsula.

In view of the growing seriousness of enemy submarine operations in the Atlantic and our heavy shipping losses, it would certainly seem that the supply of South American copper has its limits. Then too, as our expeditionary forces are spreading farther and farther about the earth we'll need more and more ships to supply them. It's possible that the flow of Peruvian and Chilean copper may be cut off entirely. At any rate, the Copper Country will know it when, as, and if such a time comes.

Aside from contradictions arising from World War II, the situation in Michigan is still essentially as reported in the preceding chapter. The Calumet & Hecla shafts, as a case in point, were shut down in October, 1939. The lode had widened out, the rock was meager, and the shafts had reached such a depth that hoisting had become an almost prohibitively costly operation. It would take at least a year to reopen the conglomerate, for this would mean unwatering the mine, reequipping the underground workings as well as putting the surface plant into operation. The cost would run into millions, an investment which obviously could not be

returned for several years. Keweenawans say that as a business proposition, reopening the C. & H. shafts would be most unattractive.

There are, however, a number of other shafts, shut down during the depression of the 1930's, which could be reopened under more favorable conditions. Plans have been considered for the reopening of the old Kearsarge shafts on the Kearsarge Amygdaloid Lode. In its heyday, this mine made a million and a half pounds of red metal a year, enough copper for thousands of rifle cartridges. In all probability the Kearsarge couldn't produce half this amount today; but patently every little bit helps in wartime. As World War II continues, the Kearsarge and other old Copper Country properties may again be producing the native copper of the Keweenaw for America's fighting forces.

However, only a portion of the eternal optimism of the Keweenaw is pinned to anything so tangible as the possible reopening of abandoned shafts. Many native sons see World War II as an opportune time to reexplore prospects given up as hopeless in the early by-guess-and-by-god days.

"How about Ed Hulbert's secret Tomahawk Conglomerate Lode?" they remind one another.

This attitude is based on something more than blind faith. Despite the operations of at least five hundred mining companies over a period of one hundred years, with allowance for the miles and miles of levels, drifts, and stopes worked during this century, only about a tenth of the one hundred-fifty-mile-long copper range has ever been explored underground.

ACKNOWLEDGMENTS

THIS BOOK WAS WRITTEN as a purely informal review of the life and times of an almost forgotten American mining district. The amount of source material on the Century of Michigan Copper was surprising—at least to the author—indicating a virgin field for the talents of a more serious historian.

If the book succeeds at all in reflecting the human side of the story of lake copper it is due largely to those who gave so generously of their time and friendship. The following are but a few of those who furnished very real assistance:

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